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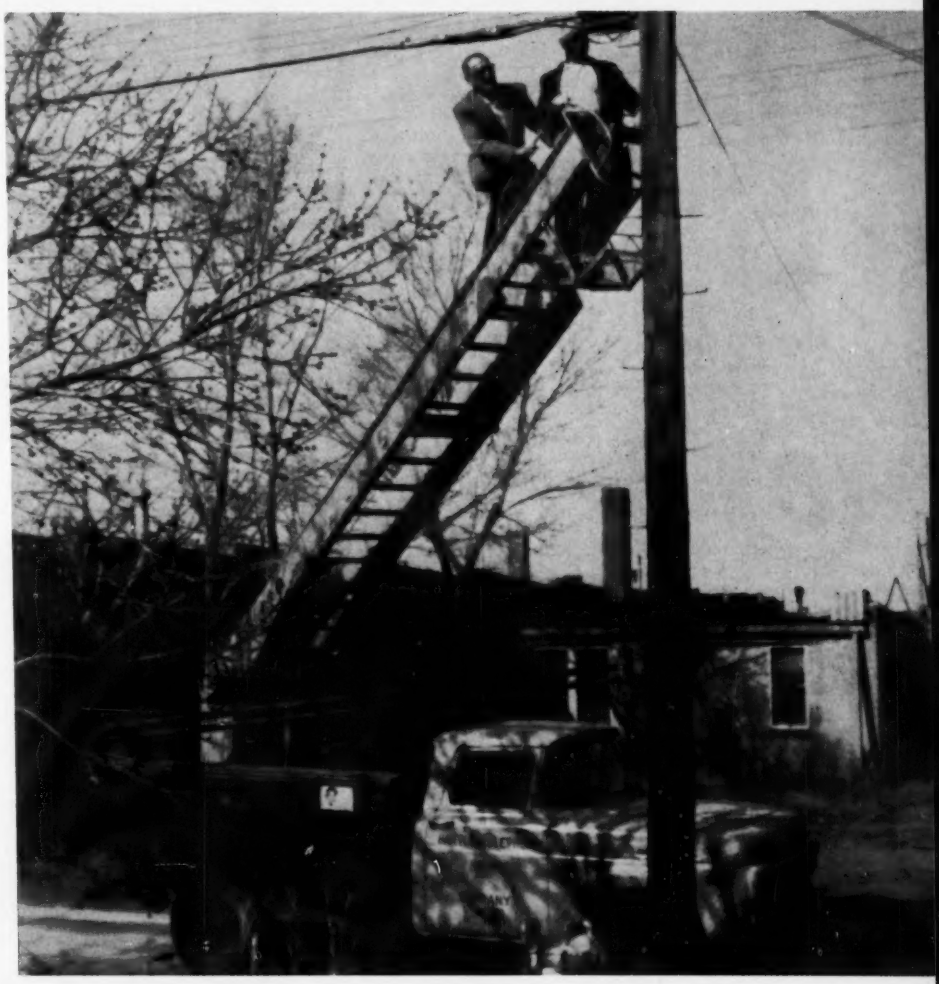
JUNE 10, 1961

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY



Smaller telephone companies are finding that modern equipment facilitates plant maintenance and construction programs. Shown here are Floyd L. Reyher (at left), manager, and Kermit Scheel, plant superintendent of the Haxtun (Colo.) Telephone Co. on a hydraulic ladder, the newest addition to the company's work equipment.

Circulation This Issue
14,355 of Which
13,749 Is Paid

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Why buy a jumbo ringer for a Petite phone ?

One size for all types of ringing.
Smaller, lower cost, rectangular shape.

Petite RINGER FOR THE Petite PHONE

This compact unit handles straight-line, all types of frequency ringing; it even provides tube space for superimposed ringing. If your requirement is for frequency ringing, this specially-designed PETITE* ringer will give you complete satisfaction. It's rugged . . . dependable . . . miniaturized.

In fact, this combination of PETITE phone and ringer from this one source *is your most economical buy.*

With thousands and thousands of PETITE phones already in service from coast to coast, telephone men are proving that the new Stromberg-Carlson PETITE is truly the most desirable and—for them—the most profitable. Independents have accepted this design at the fastest rate in history. PETITE is the perfect extension for any room in any home; ideal as a main station, too. The ringer, in soft blue beige, is modern single gong with 2-position tone switch.

Make us back up our lower cost claims with facts and figures. Your Stromberg-Carlson representative is ready to meet your challenge. In Atlanta call 875-7467; Chicago: STate 2-4235; Kansas City: HArrison 1-6618; Rochester: HUbbard 2-2200; San Francisco: OXford 7-3630.

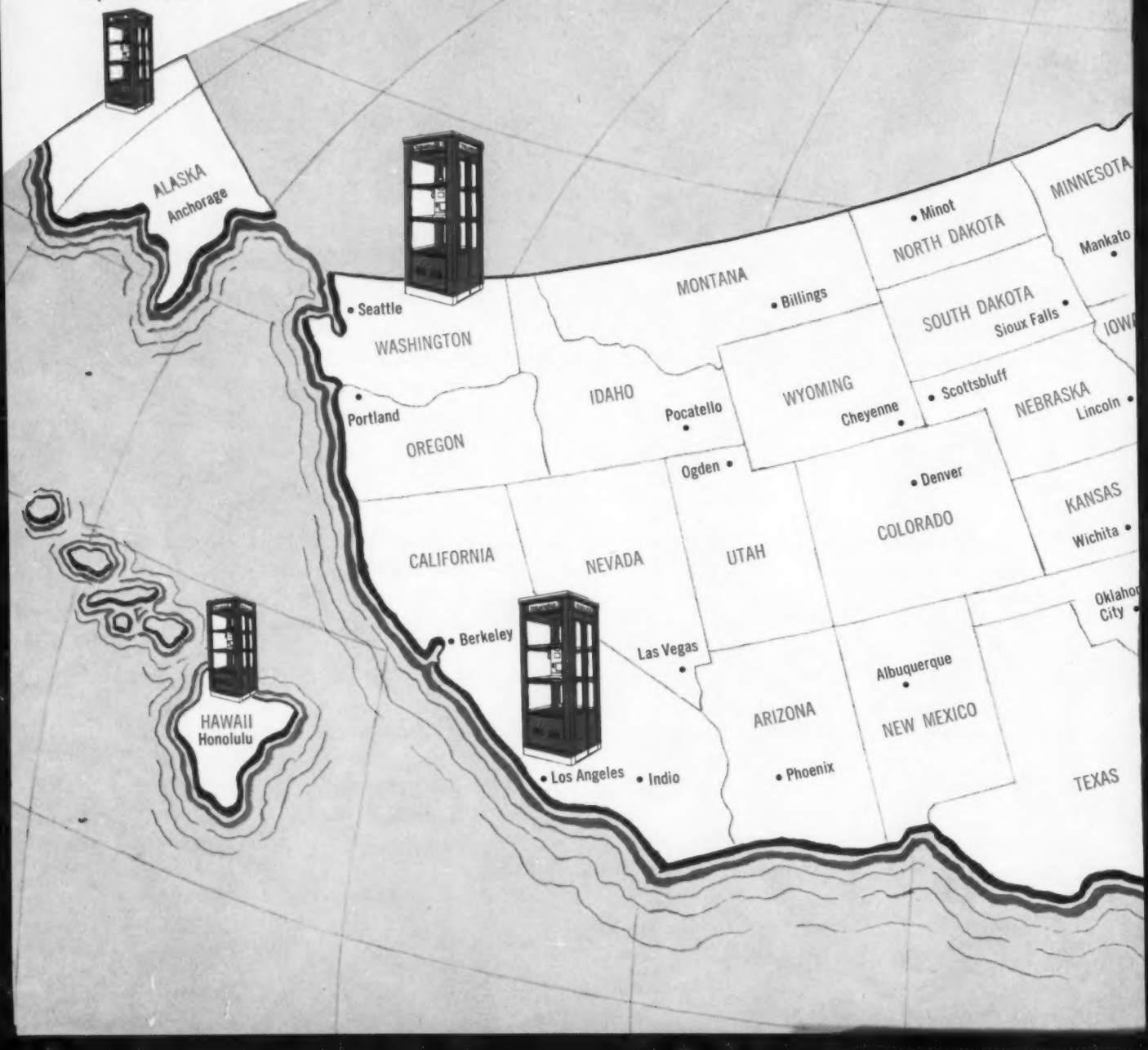
GD

GENERAL DYNAMICS | ELECTRONICS

WHAT IT TAKES TO MAKE U.S.I.T.A. COMMUNICATIONS COMPLETELY EFFECTIVE

The contrived heading of this advertisement aims to epitomize the stake and stature of the INDEPENDENT TELEPHONE COMPANY in the phenomenal expansion of our nation's communications system.

There is no way of knowing how fast or how far the industry would have progressed without the UNITED STATES INDEPENDENT TELEPHONE ASSOCIATION (USITA). The inescapable fact is that the USITA has contributed mightily to the great achievements that have been realized up to now.



With its membership made up of Independent telephone companies in all 50 states, the USITA has been a co-ordinating force of unsurpassed effectiveness. It has given inspired unity to Independent telephony which is dedicated to the furtherance of the American private enterprise system of communications.

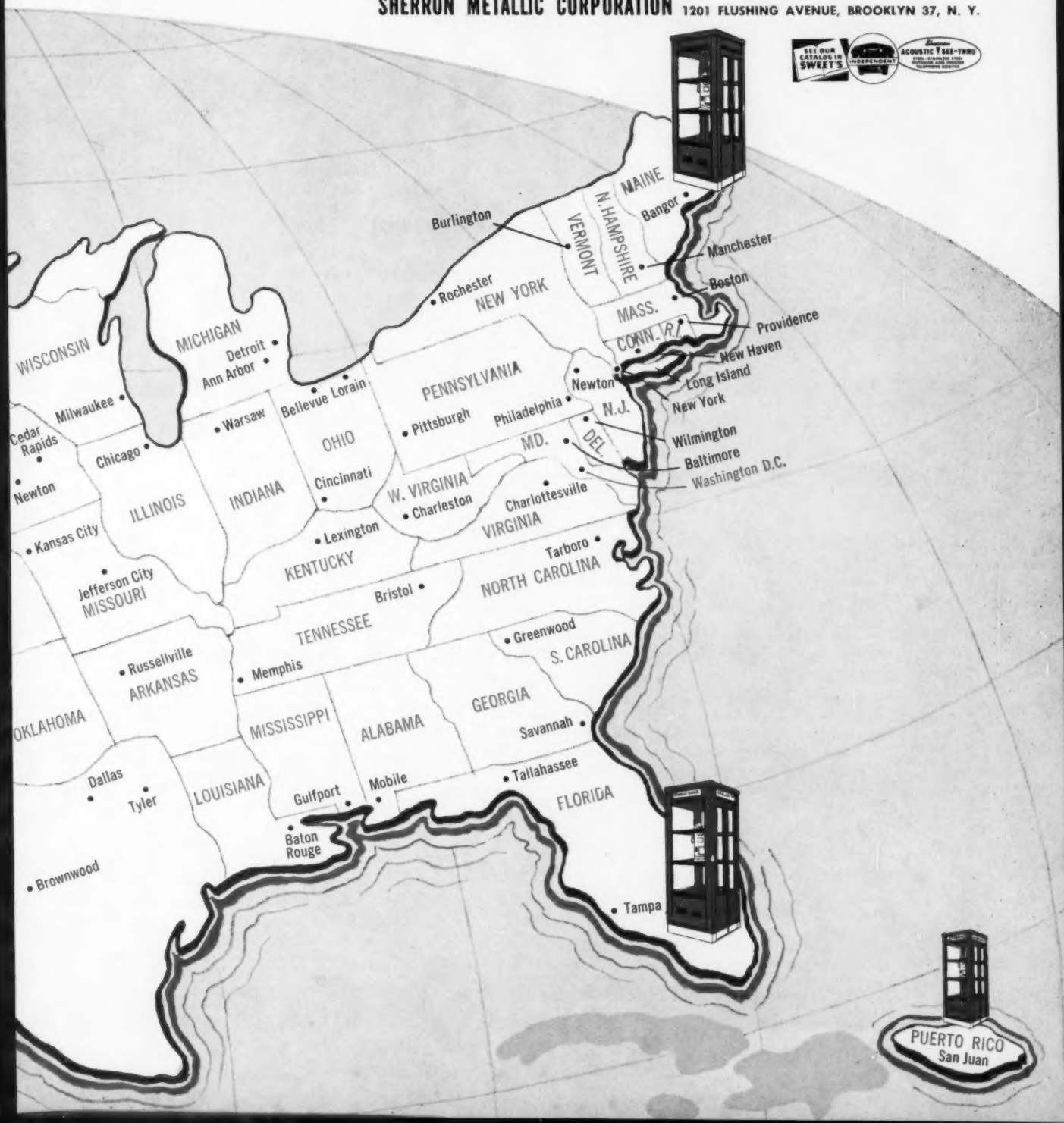
As a consequence, the Independent telephone company is constantly aware of the need to serve; to improve that service, whenever improvements are validated and wherever they may be applied.

This takes in the Independent that serves a concentration of subscribers within a limited area, as well as the Independent whose service includes hundreds of thousands of stations.

It is this universal awareness among Independents that accounts for the acceptance of Sherron steel telephone booths among the facilities that qualify as communications improvements.

(This advertisement is not to be construed as an endorsement of any product by the United States Independent Telephone Association.)

SHERRON METALLIC CORPORATION 1201 FLUSHING AVENUE, BROOKLYN 37, N. Y.



FLASHES AND PLUGS

TELEPATHIC TELEPHONIST. Electronics is really taking a firm hold in the telephone industry, but one PBX operator at a Milwaukee, Wis., department store seems to be "one step beyond" the scientists.

A gentleman who called the store reports that this telephone gal must have extrasensory perception.

It seems that when he said, "I would like to find out if you have a certain item," she answered with:

"Just a minute, I'll connect you with that department."

•

CAKE 'N STUFF. During a telephone conversation which Mrs. William Bigalk of Milwaukee, Wis., had with her granddaughter Susan, age 4, Susan announced that she was eating a piece of cake.

"I wish you would give me a piece," teased her grandmother.

For a moment or so, Susan said nothing. Mrs. Bigalk heard a strange sound in the receiver and then, Susan's voice came through, muffled.

"I can't, Grandma," said Susan. "The holes in the telephone aren't big enough."

•

VARIETY LENDS SPICE. Asked how she liked her new boss, a young secretary to a telephone executive remarked, "Oh, he isn't so bad; only he's kind of bigoted."

"How do you mean?" her friend queried.

"Well," explained the girl, "he thinks words can only be spelled one way."

•

PATIENCE PATHETIC, NOT POETIC. Does anyone wait patiently for the telephone? To this question, Georgie Starbuck Galbraith, in a recent issue of the *Wall Street Journal*, has a poetic answer:

"The Public Telephone Booth—There's nobody near it, there's nobody in it. You enter and look up your number and spin it. You put in your dime, and about that time—

"You discover there are 16 people lined up outside, who, to judge by their expressions, are waiting to call the Fire Department, President Kennedy, the Mayo Clinic, the FBI, General deGaulle, Jayne Mansfield, Cape Canaveral, their bail bondsmen, the Dial-for-Dollars program, the city editor (to stop the presses!), the Coast Guard, an obstetrician—

"And—they won't be answerable for the consequences if they have to wait one more minute!"

CHANGE OF ADDRESS

Please notify your local postmaster and the Circulation Department of TELEPHONY of change of address. Change cannot be made without the old as well as the new address. Allow three weeks for change of address to become effective.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

1901 — 60 years — 1961

June 10, 1961

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BY UNITED STATES MOTORS CORPORATION

100 KW DIESEL "MICRO POWER"

A COMPLETELY NEW DIMENSION IN NO-BREAK UN-INTERRUPTED ELECTRIC POWER SUPPLY

United States Motors Corporation is keeping pace with the industry — growing daily. In days past, our Micro Power units ranged in size from 1½ KW to 20 KW capacity. Today, we are building Micro Power units in capacities up to the NEW 100 KW UNIT pictured above. Tomorrow — we will build them even larger to satisfy the increasing capacity requirements for dependable no-droop, no-drop standby power. Every Micro Power built today reflects more than 10 years of laboratory and field research-testing. What's more — several thousand operating units attest to its demand for a wide variety of applications.

SPECIALIZED SALES AND SERVICE CENTERS LOCATED THROUGHOUT THE UNITED STATES & FOREIGN COUNTRIES

For complete information — call or write

SPECIAL FEATURES

- ★ off the line initial start-up with automatic engine control.
- ★ load isolation from incoming supply at all times.
- ★ incoming 50 cycle frequency automatically converted to 60 cycle output frequency when desired.
- ★ ultimate for stabilizing incoming variations of voltage and frequency.

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everything you need to... **BOOST**

with **OUTSTANDING**

now! 3 more ITT Kellogg

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THE FIRST 2 SELL-A-PHONE
PROMOTIONS
WERE INTRODUCED

HOME EXTENSIONS/COLOR
AND
BUSINESS KEY PHONES

MILLIONS OF PROMOTIONAL
PIECES HAVE BEEN USED
BY COMPANIES
FROM COAST-TO-COAST!

NEW!

Cinderella

Compact Fashion Phone

SELL-A-PHONE PROMOTION

All the materials to start orders rolling in . . . newspaper ad mats, bill inserts, wall and truck posters, radio scripts, news releases, display ideas folder, selling tips for your salesman, color photos for your installers and order counters.

Your local representative will be in soon with the complete story on all three of these programs. Look for him.

from Kellogg!

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Sell-A-Phone promotions

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Code-a-phone®

Automatic Telephone Answering, Recording and Dictating Machine.

SELL-A-PHONE PROMOTION

Here's the program that sells them for you! Ad mats, mailers, radio scripts, to bring in the leads. Plus a demonstration idea that actually "sells" the unit right at the prospect's desk! . . . and, all the materials to follow-up calls and train your salesmen.

NEW!

AutoCOM

Mobile Telephone Service

SELL-A-PHONE PROMOTION

Here's everything you need to get started in the fast growing mobile telephone business: Mailers, product brochures, news releases, radio scripts. Plus all the materials for setting up a local "Auto Dealer Sales Plan" to sell *for* you!

ITT

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NEW YORK: 327 North West Street, Syracuse, N.Y., HArrison 2-9251.
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ITT Kellogg products available in Canada
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1600 St. Lawrence Boulevard, Montreal 12, P.Q., Canada

New Transistorized Carrier Multiplex

System from General Electric

THE TCS-600 MEETS BOTH YOUR PRESENT AND FUTURE REQUIREMENTS WITH TRUE "BUILDING BLOCK" DESIGN

- Up to 600 full duplex voice channel capacity
- 120 channels in a standard 8-foot high rack
- Takes 1/3 to 1/10 the space of comparable tubed equipment
- Input power dramatically less than tubed equipment
- Superior channel frequency characteristics
- Static signaling used throughout; no relays
- Greater reliability — low temperature operation, many MIL spec components
- Lower maintenance—components operate well within ratings
- Less outage — parallel components in the common equipment and transmission path
- Lower cost — no tube replacement, less power consumption, far less servicing

The TCS-600 is a single sideband suppressed carrier system for cable and radio. Because of its outstanding characteristics and low cost it was recently selected for use by Western Union, Florida Telephone Corporation, Southern Railway and New York Telephone Company.

The design philosophy of the TCS-600 together with its complete transistorization has resulted in major advancements in carrier communications. It is capable of short, medium and long hauls, as well as low, medium and high channel capacity. All known requirements for a system have been met and allowance has been made for important future requirements.

Idle channel noise does not exceed 15 dba and the loaded noise is less than 23 dba. Individual channel frequency response is ± 1 db. All domestic and CCITT standards are met or exceeded.

The advantages listed above tell only part of the TCS-600 story of improved performance, reliability and reduced cost. For complete details, write General Electric Company, Communication Products Department, Section 3561, Mountain View Road, Lynchburg, Virginia.

TCS-600 POWER AND SPACE REQUIREMENTS

POWER — 48 VDC Input			POWER 120 VAC Input			SPACE					
	Without Signaling	With Signaling		Without Signaling	With Signaling	Channels	Rack Size	Without Signaling # Racks	Without Signaling Floor Space	With Signaling # Racks	With Signaling Floor Space
12 Channels	225 Watts	240 Watts	12 Channels	250 Watts	350 Watts	120	8 Ft.	2	4.84 Sq. Ft.	3	7.26 Sq. Ft.
60 Channels	310 Watts	385 Watts	60 Channels	500 Watts	800 Watts	240	8 Ft.	3	7.26 Sq. Ft.	5	12.10 Sq. Ft.
240 Channels	560 Watts	930 Watts	240 Channels	850 Watts	1410 Watts	600	8 Ft.	6	14.52 Sq. Ft.	11	26.62 Sq. Ft.
600 Channels	945 Watts	2915 Watts	600 Channels	1800 Watts	3530 Watts						

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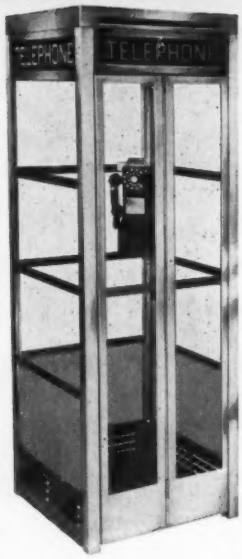

revenue with an Alcoa "Compact" Booth!

Where space is costly, you can still attract and serve revenue-bearing customers profitably with Alcoa® Aluminum "Compact" Indoor Booths. Only 28¾ in. square, this sturdy booth takes *26 per cent less floor space* than the larger outdoor model! And flush roof design lets you fit booths closer in tandem where traffic calls for multiple installations.

In harmony with any modern décor, clean-line styling of Alcoa "Compact" Booths attracts customers. Sturdy construction features heat-treated Alcoa Aluminum Extrusions . . . cuts maintenance, virtually eliminates damage from vandalism. Alumilite† finish stays bright and clean with only occasional soap and water washing.

Call your telephone jobber for more information. Or write: Aluminum Company of America, 1780-F Alcoa Building, Pittsburgh 19, Pa.

•28¾ in. square!
†Trade Name of Aluminum Company of America

ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

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Printing Experts Can Produce A Quality Telephone Directory For You!

The technical skill of telephone directory printing specialists is the key to the superior quality of Berry directories. In meeting Berry's high standards of reproduction, these experts ply their trade with speed and accuracy, using the creative skills of their craft to combine attractive typography with high readability. The results are modern, worry-free directories whose striking appearance is a source of pride for Berry's Telephone Company customers. The printing of directories is still another area of specialization used by Berry to maintain quality directory service from start to finish. Let Berry show how "It Can Be Done" for you.

for more information, call or write....

L. M. BERRY AND COMPANY

Telephone Directory Advertising Exclusively

YELLOW PAGES by BERRY

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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH AND LARRY HOGAN
WASHINGTON EDITORS OF TELEPHONY

FCC rules international common carriers should develop space communication satellites. . . . GE takes issue with commission. House committee votes for extension of telephone excise tax. Senate bills would require government to take title to patents on government-financed developments.

THE FEDERAL Communications Commission is scheduled to take another look this week at its setup for considering various applications for frequencies for space communication satellites. It called a meeting of the international common carriers—meaning the telephone companies and radio communication companies which expressed an interest in this matter—to "explore plans and procedures looking toward the early establishment" of a satellite communication system.

But a complication grew out of that very announcement because there were some other interests which are not common carriers but are very keen to get a stake in what is coming to be known as the satellite communication derby. Specifically, a subsidiary of General Electric Co.—Communication Satellites, Inc.—took issue with the FCC ruling barring it from a joint effort to develop a commercial communication satellite system. This is a new subsidiary created by General Electric for the very purpose of developing this program. On May 30 it announced that it had filed objections to the FCC's decision that only international common carriers should be included in the effort at the start. *(See other pages of this issue for text of FCC's ruling.)*

Of course the FCC's ruling was admittedly not final. It reserved decision on whether equipment manufacturers and other groups might be allowed to participate later. But the General Electric subsidiary wants in *right now*, from the starting post.

The FCC called a meeting of the common carriers in Washington June 5 to get on with the problem of working out at least an agenda covering steps to be taken in the establishment of commercial satellite communications. The complaint of the General Electric subsidiary was made by its executive vice president, D. T. Atkinson, who took the position that as many as possible should be allowed to share in the benefits of any commercial communication satellite system which may be worked out. His company had recommended to the FCC that 50 per cent of the ownership of any space communication business should be made available to the public and small business.

In other words, Atkinson thinks that all 10 of the original companies which responded to the FCC's call for a joint venture should be allowed to participate —not just the international communication carriers. In its decision, the FCC explained that limiting the joint venture to international carriers—at least initially—"is clearly indicated as best serving the public interest." This was seen as a boost for American Telephone & Telegraph Co. and International Telephone & Telegraph Corp. The position of the General Telephone System—a common carrier, but so far exclusively engaged in domestic service as far as its telephone utility business is concerned, was not immediately clear.

The commission's explanation of its ruling was as follows:

"By reason of their experience in and responsibility for furnishing international communications service, the international carriers themselves are logically the ones best qualified to determine the nature and extent of the facilities best suited as to their needs and those of their foreign correspondents, with whom they have long-standing and effective commercial relationships and who necessarily will have a substantial interest in the operation of any satellite system."

Excise Taxes Roll Again

In Washington, progress often comes by doing nothing.

Unfortunately, the House Ways and Means Committee threw a wrench in the wheels of progress by approving on June 1, by a vote of 22 to 3, an extension of taxes on autos, liquor, cigarettes, local telephone calls and passenger transportation and a continuation of the present corporate tax rate, all of which were scheduled to expire on June 30.

The measure is expected to easily pass the House and Senate without much modification. The committee's vote removes all hope that the relief deferred in last year's 12-month extension law will materialize. The passenger ticket tax would have been reduced to 5 per cent on June 30 and the tax on local telephone calls would have expired.

President Kennedy included the extension recommendations in a package for over-all tax reform, but the Ways and Means Committee, encountering strong opposition from the business community on many of the measures, is not through whacking away at the bundle. The extensions were forwarded to the full House chamber to allow the legislators ample time to pass the bills

before June 30. Hearings on the other aspects of the tax program will continue through June 9. Then the Ways and Means Committee will roll up its collective sleeves and formulate a tax revision bill.

With the administration dreaming up new drains on the federal coffers, and already facing a deficit in excess of 3 billion dollars, Congress is understandably reluctant to reduce government income.

Uncle Sam's Patent Grab

Bills now pending in Congress could stifle the nation's creativity at a time when new ideas may hold the key to our very survival.

S. 1084, sponsored by Sen. John L. McClellan (D., Ark.), and S. 1176, introduced by Sen. Russell B. Long (D., La.), would require the federal government to take title to all patents developed as a by-product of government-financed research and development contracts. At first blush, this might sound like a fine idea, but a closer look will reveal inequities and even dangers in such a development.

Uncle Sam controls 67 per cent of all the research conducted in this country. Requiring the government to take title to patents would result in a federal monopoly on an increasing area of invention. There would be little arena left for independent genius. Proponents of the new legislation overlook the fact that the work which a private company performs under a government contract represents only a small part of the effort which spawns a new idea. If the company did not have a depth of experience and know-how in a particular field, the federal government would not entrust it with a research project in that field.

The government already has a royalty-free license on such patents and it is questionable whether there is the need for outright government ownership of the patent rights. If a new type of insulation used in a rocket turns out to be an excellent liner for consumers' refrigerators, the company whose creative resources developed the idea ought to reap the commercial reward for its ingenuity, not the federal government. The result of such a policy might be for industry to funnel its inventive energies away from the government's technical problems, which would certainly be a calamity.

At the present time, there is no uniform government policy regarding patent rights. Some agencies, including the National Aeronautics and Space Administration, the Atomic Energy Commission, and the Federal Aviation Agency usually take title to all patents developed under their research contracts on security grounds. Other agencies usually permit the contractor to retain patent rights. The current proposals would eliminate this flexibility and require the contracting agency to take title to *all* patents without regard to the public interest or equitable treatment of the contractor.

In testifying before the Senate Subcommittee on Patents, Trademarks and Copyrights last month, Robert R. Lent, vice president of the Riggs Nucleonics Corp. of Burbank, Cal., and chairman of the Government Relations Committee of the Strategic Industries Association, a group of 130 small defense contractors, stated in part:

"That a new idea may provide a more accurate guidance to a ballistic missile is of enormous interest to the Department of Defense; that this same idea may more carefully control the speed and safety of roller coasters at amusement parks throughout the world at profit to its inventor can have no possible value, meaning or regard to the United States Government or any of its agencies."

There is ample justification for a reorganization study of the U. S. patent system which has remained virtually unchanged throughout its 125 years of existence, but nationalization of creativity does not seem to be a desirable end. In last month's hearings industry spokesmen and even some agency representatives vociferously opposed the proposals.

Senator McClellan, author of one of the bills and chairman of the Senate Sub-committee on Patents, Trademarks and Copyrights, says he is not wedded to the idea but will hold more hearings to give others a chance to shoot at it. Senator Long's bill, in addition to the government ownership provision, would also create a new federal agency, the Federal Inventions Administration. That's just what we need in Washington—a new agency!

Telephones on New Frontier

Telephones are playing a vital role on the New Frontier.

President Kennedy uses the telephone much more than any of his predecessors and he frequently calls down-the-line government employes or Capitol Hill leaders to get quick, first-hand information about matters pending on his desk.

This unprecedented direct approach has caused some civil servants a great deal of embarrassment. After living for years under chain-of-command ad-

(Continued on page 54)

Recent Quotations of Telephone Stock

	5/31/61 BID	5/31/61 ASKED	4/28/61 BID	4/28/61 ASKED	Current Indicated Dividend Rate
Anglo-Canadian Tel. Co.	47½	50	51½	53½	$1.20
British Columbia Tel. Co.	50½	52½	47½	49	2.20
California Interstate Tel. Co.	20¼	21¼	17¾	18¾	.70
California Pacific Utilities Co.	25	27	25	27	.90
California Water & Tel. Co.	35½	37½	38¼	39¼	1.36
Carolina Tel. & Tel. Co.	45½	47½	45	47	1.60
Central Tel. Co.	28	30	32	34	.88+Stk.
Chenango & Unadilla Tel. Corp.	27 Bid		27 Bid		1.35
Cincinnati & Subn. Bell Tel. Co.	107	110	109½	112½	4.50
Citizens Utility Co. "A"	26	27½	21½	23	Stock Div.
Citizens Utility Co. "B"	23	24¾	19	20¼	.60
Commonwealth Tel. Co.	25	26½	25½	27	1.00
Florida Tel. Corp. Class A	28½	30	29½	31	1.00
General Tel. & Elec. Corp. Common	27⅛ Last Sale		28⅝ Last Sale		.76
Hawaiian Tel. Co.	19	20	17⅜	18⅜	.54
Indiana Tel. Corp.	33 Bid		30 Bid		
Inter-County Tel. & Tel. Co.	28	30	29½	31	.72+Stk.
Inter-Mountain Tel. Co.	19	20¼	17¾	19¼	.80
Jamestown Tel. Corp.	90 Bid		90 Bid		6.00
Lincoln Tel. & Tel. Co.	65 Bid		65 Bid		2.60
Lorain Tel. Corp.	35 Bid		35 Bid		1.40
Middle States Tel. Co. of Ill.	35½	37½	34½	36½	.92+Stk.
North Carolina Tel. Co.	1½	2	1¾	2¼	
Northern Ohio Tel. Co.	65	68	64	67	2.00
Peoples Tel. Co.	105 Bid		105 Bid		4.00
Pioneer Tel. Co.	36 Bid		36 Bid		1.00+Stk.
Rochester Tel. Co.	27½ Last Sale		28⅞ Last Sale		1.00
Southeastern Tel. Co.	26	28	28½	30½	1.00
Southern Nevada Tel. Co.	42½ Bid		43½	46½	1.20
Southern New England Tel. Co.	52¼	54	53½	55	2.20
Southwestern States Tel. Co.	30	31½	31¾	32¾	1.28
Tel. Service Co. of Ohio Class A.	31	33	33	35	.36+Stk.
Tidewater Tel. Co.	27 Bid		27 Bid		1.40
United Utilities, Inc.	26¾	28	27½	29	.80
West Coast Tel. Co.	34½	36	35½	37	1.28
Western Carolina Tel. Co.	9¾	10¾	9½	10¾	.43
Western Light & Tel. Co., Inc.	32¼	34¼	29½	31	1.20
Western Utility Corp.	12¼	13½	13½	14½	.36

MIND YOUR OWN BUSINESS

A personal file of stimulating ideas; little known facts and daily problem solvers

By Ted Pollock

PRACTICAL SHORTHAND. If you've ever attended a meeting where ideas flew thick and fast—or been on the telephone with somebody who threw a fistful of facts and figures at you faster than you could digest them—or been confronted with half a dozen pages of information to copy when your next appointment was just minutes away—then you are familiar with just a few of the many occasions that make an agile pencil literally worth its weight in diamonds.

Many business and professional men, discouraged by their inability to take notes quickly, too often rely on memory. Results: Embarrassing oversights, precious time wasted in backtracking, costly errors.

To the rescue: a "quickie" training course in practical shorthand that can be mastered in minutes. There are just four rules.

• *Abbreviate.* Almost every word in the English language can be shortened. Vowels in particular may be omitted. For example: "Satisfied customers have made our reputation" may be abbreviated, "Stsfd custs hv md r rep." With practice, you will find that it is easy to train your mind—and hand—to deal only with the skeletons of words.

• *Leave out unessential words.* It's seldom necessary to write down a word-for-word transcription of what you hear or read. Take the following excerpt: "I, for one, agree that the manufacturer's right arm is advertising in all its varied forms: Newspapers, magazines, radio, television and direct mail." None of the *meaning* is lost in this version, which is only one-third as long: "Mfr's rt arm is adv: paprs, mags, rad, TV & dir ml."

• *Take advantage of natural abbreviations.* Look at the keys of any typewriter and you'll find a host of symbols that can help you cut your writing time: ¼, ½, # (number), %, $, ¢, @. Because of their pronunciation, certain letters and numbers may be substituted for common words: *b* (be), *r* (are, our), *u* (you), *y* (why), *2* (to, too), *4* (for). And don't overlook the convenience of such old stand-bys as *i.e.* (that is), *e.g.* (for example), *c.* (around, about, approximately). Example: "Mr. Lewis is in Chicago and isn't expected back until about June tenth" becomes "Lewis in Chi. Bck c. 6/10."

• *Adopt a system of letters for common words.* Less than 100 words make up 50 per cent of the average speaking vocabulary. If you can devise a system of letters for the most common words, you've licked half your problem. Many reporters use the following: *f* (from), *w/* (with), *w/o* (without), *xc* (except), *nst* (instead), *bc* (because), *h* (he), *w* (we). Example: "He failed because he thought only of himself. Without empathy, we are doomed." In "Practical Shorthand": "H faild bc h tht nly of hmsf. W/o mpthy, w r dmd."

With time, you can work out your own shorthand tricks, refining and improving on the methods described above. Try it! B4 u no it, ul b ritng fstr thn u evr tht posbl!

CHECK THIS!

There is a way to cash an "insufficient funds" check that few people know: If a check is returned "N.G." (no good), ask the bank on which it was drawn for the amount by which the account is deficient. If it's small, you can deposit the difference and then cash the check. The amount deposited can be recovered later.

Just make sure you obtain a copy of the deposit slip or indorse your own check with the notation: "Deposited by _____ to the amount of $_____ for the purpose of cashing a check in the amount of $_____, drawn to _____."

SECRET OF PERSUASION: "GROUP BELIEFS." Whether you want to win acceptance for a product, idea or point of view, you'll do a better job if you tailor your remarks to the "group beliefs" of the man you're trying to convince. Psychologists have discovered that every person "belongs" to a number of different groups whose beliefs and values he adopts as his own. A man who consistently votes Democratic, for example, tends to accept the attitudes of the Democratic Party. A member of Rotary tends to embrace the principles of that organization.

But researchers have also discovered that we are all "members" of many groups. A man can be a Democrat, a Rotarian and many other things *simultaneously.* How, then, can you relate your message to anyone who is such a tangle of diverse allegiances?

Fortunately, although everybody is a conglomeration of "group beliefs," those beliefs never exert equal influence at any given moment. The man who is a Democrat and a Rotarian is *most* a Democrat on Election Day, *most* a Rotarian at a meeting of his club. At other times, he may identify himself strongly with his family, his country, his company, his profession.

Must you merely guess a man's current "identity" before you try to persuade him? Not at all. The psychologists who investigated this problem found that a particular set of attitudes and beliefs can be stimulated in an in-

dividual simply by *reminding him of his membership in the group whose attitudes and beliefs they are.*

Thus, if you're selling air conditioners, you might remind your prospect of his "membership" in the *business group,* one of whose goals is on-the-job efficiency.

• "Mr. Jones, as a man interested in increased productivity. . . ."

• Or, you might appeal to him as a "member" of the *employer group,* among whose goals is employe loyalty and respect: "Your secretary will appreciate your thoughtfulness. . . ."

• Or, your prospect might well respond to a subtle reminder of his "membership" in the *competitor group:* "These air conditioners will give you a commanding edge over Acme."

The possibilities are almost endless. Find the group whose goals, attitudes and beliefs can be related to the benefits you are selling, then zero in.

FOUR INSURANCE MONEY-SAVERS

(1) *Save on premium payments.* If you are paying premiums monthly on any of your policies, you can save 5 per cent to 6 per cent by making payments once a year. (On a $10,000 policy that saving might be enough to enable you to buy another $500 of insurance.) If your policy is on quarterly premiums, you can save about 4 per cent by changing to annual payments.

(2) *Save a half year's premiums* on your comprehensive liability insurance by renewing it for a three-year term if now written for only one year. The same is approximately true of fire insurance. Furthermore, in most states, the three-year premium may be paid in annual installments.

(3) *Too much insurance?* You are wasting premium dollars if your home is insured for more than its actual value. Every few years, have an appraisal made of your home's value and adjust your fire insurance accordingly.

(4) *Valuable service — no charge!* At least once a year you should have your agent check over your policies and make certain nothing has become out-of-date and, therefore, not up to full value. These check-ups may save you many dollars—and they cost you nothing. They are part of the free service that goes with your policy.

A CLASSIC FORMULA FOR MAKING A DECISION. "Should I hire Jones?" "Where should we vacation this year?" "Is this the time to invest in stocks?" Decisions, decisions, decisions! Every day, we choose between alternative courses of action — sometimes wisely, sometimes "otherwisely." Although volumes have been writen on how to make a decision, no one has ever improved on Benjamin Franklin's method. In his own words—

"My way is to divide half a sheet of paper by a line into two columns; writing over the one *Pro* and over the other *Con.* Then during three or four days' consideration, I put down under the different heads short hints of the different motives, that at different times occur to me, for or against the measure taken. I have thus got them altogether in one view, I endeavor to estimate their respective weights; and where I find two, one on each side, that seem equal, I strike them both out. If I judge some two reasons *con* equal to some three reasons *pro,* I strike out five; and thus proceeding, I find where the balance lies; and if after a day or two of further consideration, nothing new that is of importance occurs on either side, I come to a determination accordingly."

Next time *you* find yourself perched on the horns of a dilemma, try Franklin's approach. You'll be surprised how well it works!

HOW TO DISAGREE — AGREEABLY! There comes a time in every man's life when he must take issue with someone whom he would prefer not to offend: A customer, a superior, an associate—even his mother-in-law! The ability to disagree tactfully is not only a social advantage; it can be a priceless aid in winning cooperation, avoiding mistakes and getting things done. Next time you find yourself in the delicate position of having to disagree with somebody, try any—or all—of these techniques:

• *Use indirection.* Instead of telling a man, "You're wrong" or "It won't do," suggest another outlet for his idea, if at all possible. Thus, if he's drafted a letter to Jones which you feel doesn't do the job, don't tell him point-blank that it's not up to the mark. Do say something like, "These two paragraphs would be perfect for the letter to Smith." He'll catch on.

• *Offer alternatives.* By suggesting *several* different approaches besides the one advocated, you provide an individual with a face-saving choice and the feeling that *he* is still making the final decision.

• *Appeal to the facts.* Don't say, "*I disagree.*" Rather, point out that the *facts* of the matter disagree. For example, instead of saying, "I don't think we ought to increase production" say, "According to the figures in Government Bulletin 35, our market is about 10 per cent smaller than we figured. Under the circumstances. . . ." Or, instead of saying, "I wouldn't buy a Blunderbuss automobile if I were you" say, "Bill Carter and Charley Glass, both of whom own Blunderbusses, say that it leaves a lot to be desired. For instance:" Of course, you must be sure of your facts before citing them.

• *Ask for his opinion.* By inviting the man with whom you disagree to participate in finding a better way, you take the sting out of your opposition. It's one thing to say, "That won't do!" —quite another to ask, "What do you think of this modification of your idea?"

FAMILY RECORD CHECK LIST

Do we have it? Where is it? Who has it? Where can we find it in a hurry? Not having the answers to questions like these in an urgent moment can cause no end of grief, loss and hardship. To keep your house in order, see whether you can tell the exact location of the following priceless family documents and papers. Right here, right now, ask yourself, "Do I know where these are?" Then check the appropriate box.

Yes	No	
☐	☐	**Birth certificates**
☐	☐	**Military discharge papers**
☐	☐	**Social security card**
☐	☐	**Insurance policies**
☐	☐	**Savings passbooks**
☐	☐	**Stocks and bonds**
☐	☐	**Will**
☐	☐	**Real estate documents**
☐	☐	**Proof of car ownership**
☐	☐	**Receipts and receipted bills**
☐	☐	**Marriage records**
☐	☐	**Organization membership records**
☐	☐	**Cancelled checks and stubs**
☐	☐	**U. S. Savings Bonds**
☐	☐	**Tax return records**
☐	☐	**Business documents, contracts**
☐	☐	**Cemetery plot deed**
☐	☐	**Licenses**

If you checked any "No's," you have your work cut out for you: Find 'em and record their exact location. Better yet, collect them and put them in one secure place, like a safety deposit box.

The Plant Man's NOTEBOOK

By RAY BLAIN, Technical Editorial Director

THE WRITER WAS privileged to attend the recent inaugural ceremonies held in Washington, D. C., launching the major expansion of Western Union's automatic, two-way "dial-telegraph" Telex system.

The ultimate plan is for this system to serve the entire country through automatic exchanges in 181 cities. At the time of its inaugural, this system linked Washington with 22 other metropolitan city areas. It will also enable local subscribers to connect directly in 8 seconds, or less with 140 points in Canada and Mexico.

Western Union Telex is a flexible, fully automatic communications service, in which the customer dials his own direct connection, "talks" in written form on a two-way or one-way basis, or transmits data from central office processing, and simultaneously obtains a permanent record of his connection.

The connections are electronically established when a subscriber dials the number of a distant subscriber's Telex machine.

Confirmation of the correct connection is received instantly by pressing a "who are you" key on the originating unit, causing the distant unit automatically to "answer" with the name and city of the subscriber. No one is required to be in attendance at the number called, since messages and data can be transmitted with the assurance that they will be received at their correct destination, once the connection is established.

First introduced in the United States by Western Union, Telex is a thoroughly tested, high-grade communications service already being operated extensively in Western Europe and Canada. Since mid-1958, when the telegraph company first began testing service between the United States and Canada, it has won full customer acceptance at New York, Chicago, Los Angeles and San Francisco.

When a subscriber initiates a call, the exchange equipment automatically seeks out a circuit over which the call can be routed to its destination. If all circuits are busy, the calling subscriber's machine is automatically "notified." All connections, regardless of distance, are established by simply dialing the number, and no assistance by telegraph personnel is required.

When a connection is established, the exchange equipment recognizes the dial digits indicating the destination of the call; as a message is transmitted, automatic metering equipment records the number of "pulses" for charge purposes. This same equipment automatically recognizes calls to information centers on "tie line" positions, where regular telegrams are received from subscribers, so that no Telex charges will be applied for such calls.

Plans provide for the rapid expansion of this system to provide service for 20,000 subscribers in the United States. In the near future, also, this service will be extended to Europe, Africa, the Far East and South America.

•

The Pacific Telephone & Telegraph Co. recently placed new van-type trucks into service for the use of repairmen and installers. These new trucks will fill the need for a greater carrying capacity of 1,840 square feet, as compared to the 1,100 square-foot capacity of the old trucks.

The new models also offer greater flexibility. The standard bin can be used for various types of work, whereas the old models had to have special bins for each work operation. With their double doors on the side and rear, the bins also make tools and materials more accessible, and provide greater protection for equipment.

Other economy vehicles which will soon be placed in service are a new pickup truck with side-loading platform, and eight and nine-passenger personnel carriers.

A number of economy model passenger cars have already been in service for several weeks.

•

The park police in Washington, D. C., recently fished nine paystation coin boxes out of the Potomac River. These coin boxes had all been stolen from outdoor-type booths in nearby Virginia.

It's hoped that the inventive ability of the telephone industry will soon devise a means of preventing theft and vandalism of this nature.

•

A new "voice for the farm"—a communications system designed to make farm living more convenient and farm operations more efficient—is now being offered by Indiana Bell to Hoosier farmers. It is named the Farm Interphone.

Five years of Bell System research, including trials on more than 100 farms, were required to develop the Farm Interphone. This system combines regular telephone service and intercommunication between the house and outbuildings.

The basic Farm Interphone "package" includes a master telephone in the house, an extension telephone in the barn or other outbuilding, and a two-way loudspeaker-microphone located in the barnyard. Additional telephones and loudspeakers are available to meet individual requirements.

Indiana Bell has obtained approval of a schedule of charges for the Farm Interphone service. The rates for the basic system are $25 for installation and $11.50 a month for continuing use of the equipment. Monthly charges for regular telephone service and extensions are not included in this charge.

The Farm Interphone eliminates yell-

ing between the house and barn. It ends running from the house to outbuildings to call someone to the telephone. It also reduces missed telephone calls. With this system, calls can be made or received at any of the telephones. Incoming calls ring at all locations. Each telephone has a speaker-microphone mounted at its side. This permits talking between buildings.

•

General Telephone Co. of California reports that during 1960 the company's accident frequency rate, per 1 million manhours, decreased 14 per cent; and the severity rate dropped 52 per cent. Lost-time accidents dropped from 90 in 1957 to 77 in 1960. Much of this progress toward a safer company was attributed to first aid training and safety programs.

•

The E. D. Bullard Co. recently conducted a demonstration head-protection test, designed to fulfill the requirements of Federal Specifications #GGG-H-142b. In this test, an 8-pound ball was dropped five feet to strike the safety hat or cap. This 40-foot-pounds of weight was used to determine whether the hat will "dish in" when hit, and injure the skull of the wearer; also, whether the shell and the suspension would absorb enough of the impacting force to prevent the neck from being broken.

These tests indicated an impact equivalent to 720 pounds of transmitting force. The same weight, dropped on an unprotected head block, caused an impact of 3,000 pounds. In other words, "Hardboiled" safety hats, or caps, absorb more than 2,380 pounds of impact.

If the writer ever returns to line work, he will certainly wear a safety hat. The results of this test should convince everyone of the necessity for a hard hat.

•

During peak periods, just prior to issuance of new directories, Bell information operators in Tulsa, Okla., handle more than 35,000 calls daily. Thirty seconds is the company's objective for "average disposition time" on all information calls.

Disposition time starts when the operator gets the request from the customer, and ends when she gives him the answer. Granted, there are many frequently called numbers that the operator memorizes, and these calls help reduce the average. There are, however, plenty of "Jim Jones—I think he lives on Waters Street" calls that shift the average in the other direction.

Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

Q. What are the advantages claimed for the use of pole-mounted dry air compressors for pressurizing telephone cables?

A. This type of compressor has been developed to meet the requirements for an economical outdoor pressure source to supplement the central office air dryers. Also, it is versatile in its application to constant flow pressure systems.

This compressor can be used on aerial plant extending a considerable distance from the central office. The pole-mounted unit can serve to boost pressure toward the end of the cable and back toward the central office pressure source. This arrangement ensures the maintenance of effective minimum pressures along the entire cable run.

These units can also be used to advantage to protect special cables such as those serving airports, isolated communities, important commercial enterprises, professional subscribers and, particularly, subscribers with guaranteed service.

It can also be used to advantage in small exchanges, community dial offices, repeater stations, etc., where space is always at a premium. This unit requires a minimum of space since it can be mounted on an inside or outside building wall or on the nearest pole.

•

Q. Will you please furnish us some information on how to prevent aerial plastic cable from dancing in a high wind?

A. The following method is generally used to correct trouble of this nature. Spiral the cable around the strand in each span. Two adjacent spans are spiraled at the same time by performing an operation at alternate poles throughout the length of the affected cable. This is accomplished by first removing the cable and suspension clamp from the supporting bolt temporarily. Place a suspension bolt through the middle hole of the three-bolt clamp and, using the bolt as a lever, twist the cable and strand until the cable is spiraled around the supporting strand. The twisting operation should continue until the spirals nearest the pole are about 20 feet in length.

Care must be exercised to prevent damage to terminal stubs and splices that might be affected by this operation. Poles on which terminals are located should not be used for spiraling the cable. Straight splices will normally not be affected by the spiraling operation.

•

Q. Please describe alpeth cable and advise us whether or not it is considered suitable for both aerial and underground use.

A. Alpeth is a high quality plastic cable and is suitable for both aerial and underground use in conduit in exchange areas. The conductors are solid, annealed copper in sizes No. 19, 22 and 24 AWG. The insulation is heat-stabilized polyethylene having excellent electrical qualities and high resistance to moisture. The core covering is non-hygroscopic core tape. The sheath is composed of aluminum tape and a high molecular weight jacket over-all.

The inner .008-inch aluminum tape is applied longitudinally with an overlap. It is corrugated for flexibility on large-diameter cables. The low dc resistance of this tape properly grounded limits the effect of induction from power lines and reduces the possibility of damage to the cable from lightning.

•

Q. I'd like to know how plastic cable, designed for direct burial, differs from that provided for use aerially and in underground conduit?

A. Cable designed for direct burial features a double jacket and in some cases a heavier metallic tape shield. The inner jacket provides mechanical protection, plus additional dielectric strength between the core and ground.

The shield is either one 5-mil or 10-mil copper tape, electrically continuous. The heavier tape is recommended for use in areas subject to rodent attack. Aluminum shield is also available.

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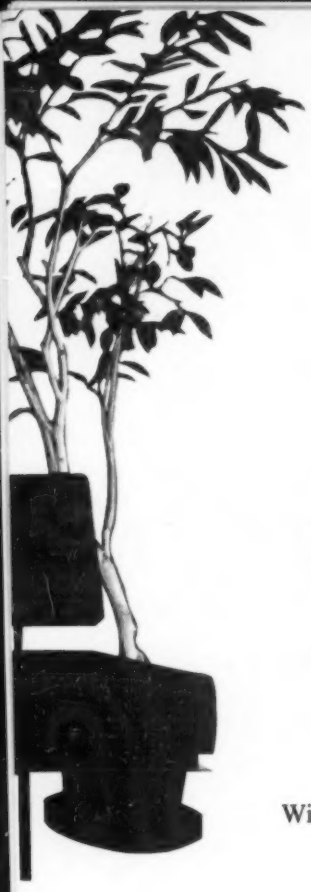


You Save Time and Money

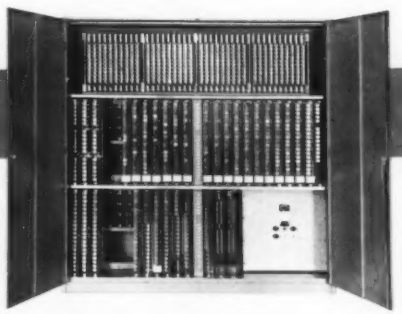
WITH MODERN BUSINESS COMMUNICATIONS

Modern dial telephone service can save time and money for your business. With the Type 80A system, your employees can dial both inside and outside calls—without help from the switchboard attendant. Up to 80 telephones are furnished. Within the office, people call each other by simply dialing three digits. They stay at their desks working instead of carrying information from place to place. Different departments work together efficiently.

You maintain better communications with people outside the office, too. Customers reach you, and you reach them, without delay. To call outside, you just dial. Incoming calls are routed quickly and efficiently by the attendant.

Today's dial telephones are available in 10 attractive colors and black.

Modern, easy-to-use turret lets attendant answer incoming calls, then extend them by simply pressing three buttons. Turret is space-saving—only 16 inches wide (excluding hand-set cradle), 16½ inches deep, and 7½ inches high.



Switchboard unit occupies a minimum of floor space, operates quietly. Grey metal cabinet is 6 feet wide, 15 inches deep, and 6 feet high.

You Dial Inside Calls

To Call another inside party, you just dial a three-digit number. No help is needed from the switchboard attendant.

To Transfer an outside call to another inside party: dial "1" and then dial the other party's number. If he accepts the call, you hang up and the call is automatically transferred.

To Consult with another inside party while talking on an outside line: dial "1" and dial the inside party's number. This excludes outside party from hearing your conversation. To return to the outside party, ask the inside party to hang up, and then you dial "1" again.

To Make a Conference Call (optional) while talking to an outside line: dial "1" and the inside party's number. Tell the inside party you would like to include him in a conference call, and then you dial "1" again. This sets up the three-way conference.

You Dial Outside Calls

To make an outside call, you simply dial "9," wait for dial tone, and dial the number you want.

If desired, any inside telephones can be restricted from dialing outside calls. The restricted party dials "O" to reach your attendant, who then places the call.

Attendant Extends Incoming Calls Quickly with Simplified Turret

Incoming calls from the public telephone exchange are normally answered by your attendant. She quickly connects the caller to the proper inside party by pressing three buttons on the turret.

For example, if caller wants to speak to Mr. Jones on extension 239, attendant merely presses 2, 3, and 9 in sequence.

When the attendant is absent or if your system does not include an attendant's turret, you handle incoming calls in one of two ways—

- You can pick up any phone and dial "8" to answer an incoming call. You can then transfer the call to any other phone in the system.
- Only certain assigned telephones are arranged to receive incoming calls. To answer, you just pick up the phone. No transfers possible.

Other Services to Fit Your Needs

Code Call

People are called to phone from anywhere in your organization. To make a code call, you dial the desired person's code number. His code is sounded, and he is automatically connected to calling party by his dialing "231."

Meet-Me Conference

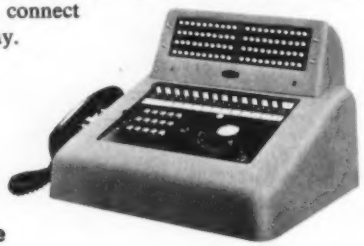
As many as four inside parties may hold a local telephone conference by each dialing the digit assigned to conference at a mutually agreed time. If you want to include an outside party in the conference, up to three inside parties may be connected.

Public Address System Cut-In

Permits an inside party to connect to a public address system by dialing an assigned number. He can then make announcement, or page another person.

Line Busy Lamp Field

Lamps let attendant see at a glance which telephones are busy. On incoming calls from public telephone exchange, she can inform caller immediately if she sees the inside party's phone is busy. When she sees the line is free, she can connect waiting party without delay.



- **Tie Trunks**
- **City Trunk Storage**
- **Rotary Line Service**
- **Executive Right-of-way**
- **Transfer from One Turret to Another**
- **Standby Power**
- **Operation without Attendant's Turret**
- **Restricted Toll Service**
- **Centralized Dictation**

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The BRINGS JOBS and JOB-SEEKERS TOGETHER

By ALEXANDER I. WARRINGTON

ABOUT 100 PER CENT, or nearly so, of all procedures that enter the bringing together of jobs and job-seekers is done by the telephone. This is true of both private and public employment agencies and represents a sort of climax of trends that have been going on for the past 20 years.

There is a great deal more to telephone technique in the job placement process than most people realize, including job-seekers. To tell the whole story would require a 500-600 page book and such a book will eventually find its way to the market. In the meantime, a few selected items will be presented to readers of TELEPHONY.

Telephone Primary Means

Private and public agencies canvass employers for job openings through personal solicitation and the mails and also use such media as the newspapers, radio, and television. However, all of these efforts account for only a small fraction of the transactions that are handled by telephone. The telephone is the primary means used in securing job openings by private and public employment offices.

Then, too, employers who are looking for workers use the telephone in preference to other means, or in combination with other avenues for securing qualified personnel.

The job specifications and job descriptions that have been developed as a result of dependence on the telephone in bringing jobs and qualified persons together comprise printed volumes running into thousands of pages. A summary of technical releases of this type is impossible. About all that can be done is to make a description something like this: The volumes and volumes of technical publications on the general subject of job specifications and descriptions is the natural outgrowth of the recent trend toward telephonic job placement programs. In such programs, brevity and accuracy are the outstanding factors.

Job Coding System

Brevity of descriptions is necessary because no one likes to receive a long, complex, technical message over the telephone. It can readily be seen, however, that for an employer to telephone an employment agency for an engineer or a mechanic would raise numerous questions as to the exact type of engineer or mechanic desired. A sentence of two might clear the situation up, and then, again, it might not.

The trend in using the telephone for securing personnel and in placing applicants in positions commensurate with their skills and abilities has brought about a universal system of coding jobs, under the leadership of the U. S. Department of Labor. There are few jobs which have not been classified and coded, and this makes it possible for job descriptions to be nationally uniform with tremendous international acceptance of the general patterns developed by our government in cooperation with universities and many technical and economic organizations.

"Common Language" Used

The influence of the telephone, nationally and internationally, in producing a high degree of uniformity throughout the United States and the world in job descriptions and specifications, amounts to the development of a "common language" or perhaps "languages in common."

The point can be illustrated by college courses throughout the world on the graduate level. Graduate studies in economics, engineering, medicine and other fields are conducted in most of the nations throughout the world. Even though the lectures are usually in the language of the nation where the college or university is located, there is a language in common in economics, engineering and the other disciplines. This is one of the main reasons for graduate work and it is one of the great forces in the world for bringing about something in the way of uniformity in the approach to problems, research, and other efforts. The word "uniformity" is limited in this description to understanding, and has nothing to do with individual ingenuity and ability.

Used More With Telephone

Therefore, economists in the United States have no serious difficulty in understanding the articles prepared for the academic journals in other countries unless, of course, one doesn't understand the language in which the articles were written. It doesn't make much difference if papers are written in French, German, Italian, or Swedish. If they have outstanding merit, they will be translated. It is also interesting to note that many countries have their own English versions for academic articles, which removes the language barrier for those who are limited to the English language.

Coming back now to the telephone and job specifications and descriptions,

(Continued on page 30)

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IN GOD WE TRUST
1952

A NEW LOOK FOR A FAMILIAR SHOPPING GUIDE

Silver dollars in the Yellow Pages?

It may seem unlikely, but it's an important part of the sound and sprightly "new look" in Yellow Pages advertising.

Here silver dollars are used to represent the value of directory advertising to consumers and businessmen alike.

In another advertisement the Yellow Pages are shown holding a diamond necklace, a light plug and a spark plug. What better way to illustrate the wide scope of products and services listed in the directory?

The copy for these advertisements is chockfull of common sense, too. It tells how shopping first in the Yellow Pages saves time, steps and money.

Everyone who reads Life, Post, Look, Newsweek, Time, American Home and Better Homes and Gardens (and that's just about everyone!) will probably look—and look again—at the "new look" in advertising.

We're confident that this greater interest will help build greater sales for all directory salesmen.

BELL TELEPHONE SYSTEM

this "meeting of minds" in the broad fields of employment and personnel has been more pronounced throughout the world than in academic fields cited for illustrative purposes.

The implications are almost endless. A New York publisher can arrange to hire a correspondent in Rome by telephone. A French automobile manufacturer can make sure that he secures a qualified service mechanic in Brazil. A Philadelphia research agency can secure facts for an Oklahoma exporter for a potential market in Denmark. Oil exploration by a Texas company can be arranged in the near East. And so it goes on endlessly.

Measuring Yardsticks Set Up

Most people set up a sort of yardstick for measuring programs, techniques, and things of the nature mentioned in the paragraph above on the basis of the most immediate and pressing problems. While this is not a very scientific way to appraise economic progress and techniques, scientists and technicians soon find out that we have to learn to live in the world as it is, rather than the way it ought to be, and it then follows that, today, the world is concerned with equitable distribution of wealth and income, employment and unemployment, and a complex of social, national, and international problems that are a part of life and the means of keeping alive.

This is a weighty deliberation, but no matter how weighty it may be, it cannot be dismissed. If explanations were to be made in line with the most distinguished and most highly recognized schools of economic philosophy, the message would have to be confined to academicians.

Employment Level Affected

If the telephone has been the major means of bringing jobs and qualified persons for those jobs together quickly and efficiently, and if the telephone has been the leading influence in bringing about new and improved personnel-selection techniques and job-description and job-specification programs, what has been the result on the level of employment nationally and internationally? (We ask this rather long question because that is one of the things with which the world is deeply concerned, particularly at this moment and always.)

The answer to the question is this: (1) The advances made in the techniques in closing the gap between jobs to be filled and persons looking for jobs have reduced idle time, thanks to the telephone, from days, and even weeks, to hours. (2) If this reduction in idle time were estimated nationally and internationally on an annual basis, we would find that virtually armies of employed persons are on the job instead of walking the streets looking for something to do. Such an estimate can be made and when time permits, research along these lines will be done for publication in TELEPHONY at some future date.

From information which has been reviewed, it appears that 12 million persons would be jobless in the United States today (in addition to those already unemployed) were it not for the telephone techniques described in this article, and in the "free world" the figure would be at least 37 million unemployed. However, these figures are hardly more than guesses that can be accepted or rejected until such time when more reliable information will be released.

Need Skilled Personnel

Unemployment based on persons seeking work is one thing, and the releases are more or less perpetual on that subject. There is, however, another phase of unemployment that is not receiving the publicity it deserves in the general public interest. This refers to positions that become vacant and remain vacant because properly trained and skilled individuals cannot be found.

The personnel techniques that have been growing to maturity along with the telephone era have been very considerable in reducing this situation, but it is still with us.

During the worst part of the Great Depression, this analyst visited the personnel officer of Cities Service, in the center of that assembly of buildings popularly known as the heart of Wall Street. The personnel officer made this rather amazing statement, and then went to the window and pointed to a number of buildings that were plainly visible: "Over there they are looking for a man at a salary which starts at $10,000. In that building, next to it, there are three vacancies at more than $10,000 each." Then returning to his desk and regarding me gravely, he said, "Would you believe it possible that with millions and millions walking the streets, in what seems to be a hopeless quest for employment, there are 17 jobs in this immediate area that continue to be vacant, even though they all begin with $10,000 per year or better?"

After a moment of silence, he concluded, "Even in the worst of times, positions that require much, find difficulty in securing people to fill them that are properly trained and otherwise qualified."

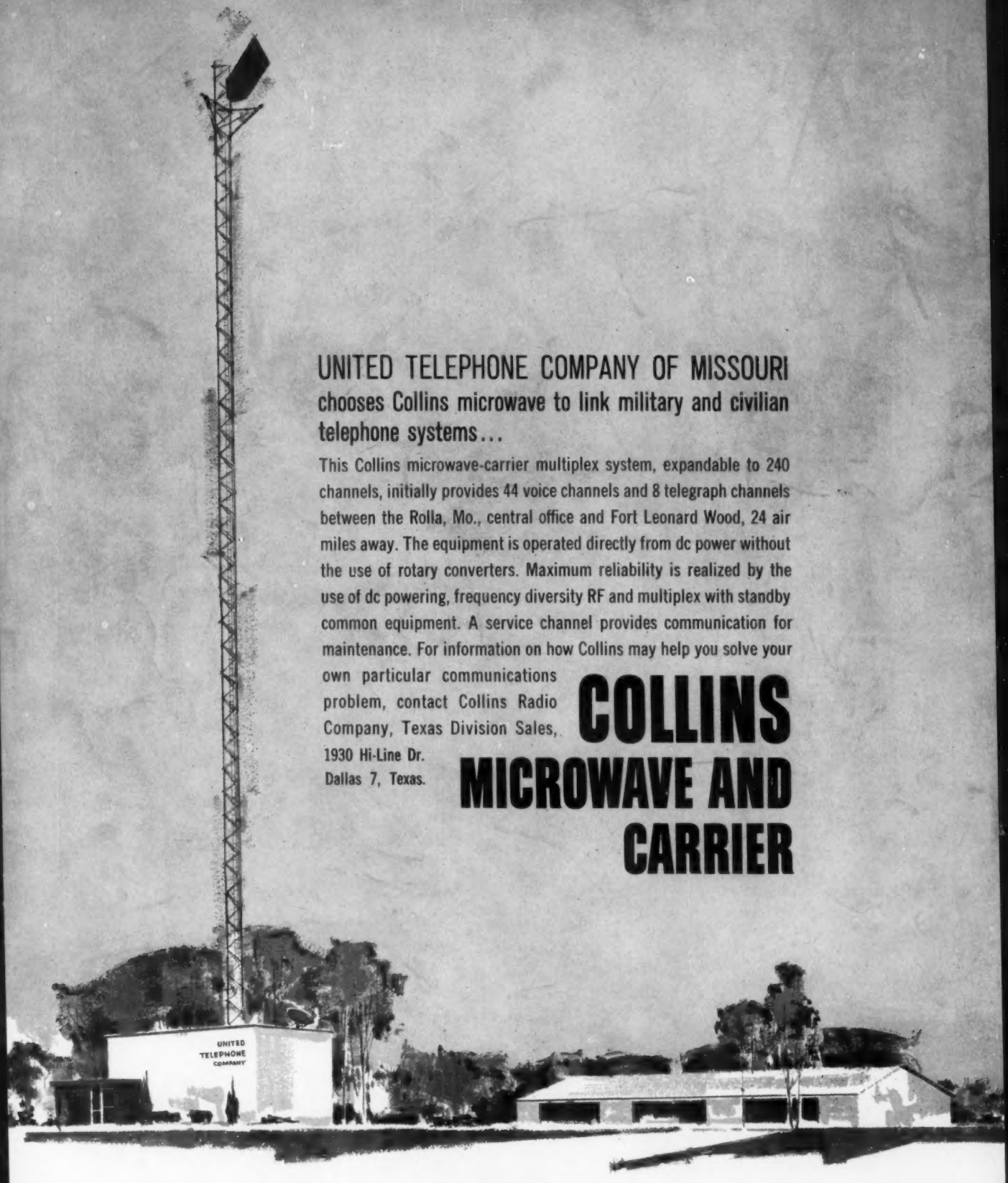
This is one of the enigmas that face us, but it is no more amazing than the high cost of food because we have too much food.

The present recession seems to be coming to an end and while large-scale unemployment is always a national tragedy and individual unemployment is an individual tragedy, the forces of adversity have been much less severe and of shorter duration than recurring periods of economic malfunctioning.

There are many reasons for this vastly improved situation and the telephone as a means of connecting available jobs with available personnel is a contributing factor. A development which has been instrumental in keeping the economic machinery in motion is the great reduction in the time required to fill vacancies.

However, there is a serious problem that lies ahead and that is to secure properly trained persons for the highly technical jobs that are developing. The various levels of government, in cooperation with colleges and technical schools, are trying to keep abreast of these rapid changes in required skills and general educational backgrounds. Actually, it is one of the greatest challenges that the nation has ever faced, and the next five years will determine how well we cope with new economic horizons that are confronting us.

To acquire skills, training, and education calls for considerable personal sacrifice. Once these sacrifices are made, the efforts and self-denials may prove highly rewarding. The evidence is already strong and clear that America will be ready and capable of meeting the complex economic and social problems that lie ahead. About all that is required is to do as well in the future as we have done in the past along the lines touched upon in this article.



UNITED TELEPHONE COMPANY OF MISSOURI

chooses Collins microwave to link military and civilian telephone systems...

This Collins microwave-carrier multiplex system, expandable to 240 channels, initially provides 44 voice channels and 8 telegraph channels between the Rolla, Mo., central office and Fort Leonard Wood, 24 air miles away. The equipment is operated directly from dc power without the use of rotary converters. Maximum reliability is realized by the use of dc powering, frequency diversity RF and multiplex with standby common equipment. A service channel provides communication for maintenance. For information on how Collins may help you solve your own particular communications problem, contact Collins Radio Company, Texas Division Sales, 1930 Hi-Line Dr. Dallas 7, Texas.

COLLINS MICROWAVE AND CARRIER

COLLINS

COLLINS RADIO COMPANY • DALLAS, TEXAS • CEDAR RAPIDS, IOWA • BURBANK, CALIFORNIA

Wisconsin Convention Affords Broad Industry View

By Dan S. Fargo

THE WISCONSIN Telephone Association's convention program on May 2 and 3 in Milwaukee comprised a broad selection of industry matters—including REA, selling, depreciation, the national picture—and was leavened with the wit and philosophy of two out-of-industry speakers. Association president L. J. Robertson of Platteville, presided.

Norman M. Clapp, administrator of REA, in his talk pointed out 1960 census figures showed that about 65 per cent of this country's farms have telephone service. At the time Mr. Clapp spoke, REA had loaned 781 million dollars to telephone companies—about 503 million dollars to 535 commercial companies, and 278 million dollars to 211 cooperatives. Nine borrowers are behind in their scheduled payments, for a total of $285,000, he said, and REA is making special efforts to put these systems on a sound financial basis.

Of the 131,215 Wisconsin farms recorded in the 1959 Census of Agriculture, a little better than 79 per cent had telephone service. Although this represents an improved state of affairs, Mr. Clapp went on to say:

"We know our way around well enough to be a little uncomfortable, I hope, about the potential subscribers who are still unserved. The census data uncovered 12 counties in Wisconsin where between 500 and 1,000 farms still do not have telephone service. Another county has more than 1,000 farms without telephones, and still another has more than 2,000 farms without service.

"We want to see area coverage telephone service provided in every rural area in Wisconsin—and in every other state as well. But this is not REA's job alone. It is a job that all of us must share — REA, commercial companies and cooperatives alike, and all those in positions of public trust—local, state, and federal—whose actions affect this program. We share a joint responsibility for getting dial service to unserved rural subscribers just as fast as we can.

"We are going to be seeking your help in taking stock of the situation in Wisconsin. We want to find out where the unserved 21 per cent live. Are they within reach of present service lines? Are they in areas that can be served without diminishing present density? Are they beyond the reach of present line extension policy?

"Some of you have confided to me that better promotional efforts could put more telephones in homes already within reach of the pole line. Better line-fill on systems already built should make it easier to reach out a little farther for those beyond the end of the lines."

Mr. Clapp also mentioned that a reappraisal of REA is underway with the following being some of the questions asked:

(1) Has the REA followed the most effective course in reaching the goal of rural area coverage set forth in its Congressional mandate?

(2) Have REA loan policy and practices allowed too large a percentage of loan funds to be expended on non-rural central exchange facilities incidental to providing expanded and improved rural service?

(3) Has there been unfair discrimination in the treatment of cooperative loan applicants as compared with commercial companies seeking loan funds from REA?

(4) Have speculative practices of certain commercial promoters in the industry been allowed to subvert the real purposes of the program, using low-interest, long-term loans of REA for the enrichment of such promoters rather than for the extension of improved telephone service at the lowest feasible cost?

(5) Has REA provided sufficient technical assistance to borrowers in promoting the purposes of the telephone program?

Mr. Clapp said he feels these questions are ones borrowers, as well as REA people, should be considering; each has a responsibility for the fullest improvement of this program. He added: "When I speak of borrowers, I include, of course, both cooperatives and commercial companies."

He said that existing companies are entitled to do the job if they will; but, in some marginal areas, cooperatives may be called upon to do the job. He continued:

"They (cooperatives) offer people who need service a means of banding together to help themselves. Their primary motivation is the need, the desire for service rather than financial profit.

"I mean no slight to telephone companies. The record of many companies in extending their lines into the surrounding countryside is excellent. REA will continue to make loans to companies where they can serve rural people as provided in the Act.

"If we work together in good faith, this program will move ahead. . . ."

R. F. Stensrud, northern unit sales manager of General Telephone Co. of Wisconsin, posed the question: "What Are You Selling?" He outlined some of the ways to obtain additional revenue by presenting to subscribers new services that will add to the value of their present telephone service. On the matter of calling on subscribers, he said:

"Your customers, believe it or not,

want to be called on. For years in this business, I think we have gone on our merry way just furnishing telephone service.

"In most cases, the only times we contacted the customer or he contacted us was when his service was out of order, or . . . other situations too numerous to mention. . . .

"In making a visit to a customer's premises to show him how we can make life easier for him, whether it be in the home or his business, we found that we were actually surprising the customer—in fact, arousing his curiosity."

Mr. Stensrud went on to say that if his listeners thought they'd be making nuisances of themselves by calling on subscribers, then they should put themselves in the subscriber's position. He explained: "If there were no salesmen to tell you about the new things, new ways, new improvements on equipment . . . can you imagine how long it would take if every businessman had to take the time from his work to travel and shop for everything he needs to successfully operate his business?

"You are actually offering your customers an additional service by visiting him periodically, advising and recommending to him new and modern ways of communication."

Mr. Stensrud included the following equipment as of special interest to subscribers for its time or money-saving potential:

Automatic dialer.
Telephone key systems.
Speakerphone or no-hands telephone.
Paging systems.
Color telephones.
Outdoor telephone booths.
Walk-up or walk-in telephone booths.
Automatic telephone answering equipment.

Two veterans of the telephone industry reminisce. Dan McNulty (left), president of Telephone Repair & Supply Co., passes along an amusing anecdote to Walter Dakin, Madison, a past president of Wisconsin State Telephone Association and former chairman of the Board of General Telephone Co. of Wisconsin.

K. E. Corlett, division sales manager, Wisconsin Telephone Co., in continuing on the subject of "What Are You Selling?", explored further why telephone companies are merchandising. It's to make money and to compete successfully, he said; if we in the telephone industry don't fill this gap and sell, someone else will.

Mr. Corlett described the sales opportunities inherent in the home interphone, door chimes, hotel-motel service systems, and the farm interphone. The farm interphone's usefulness was proven with a movie, titled "The Telephone for the Farm."

Mr. Corlett pointed out that some of the features shown in the farm interphone film would also be of use to landscape gardeners, lumber and brick yards, and other businesses, the headquarters, offices or yards of which cover large outdoor areas.

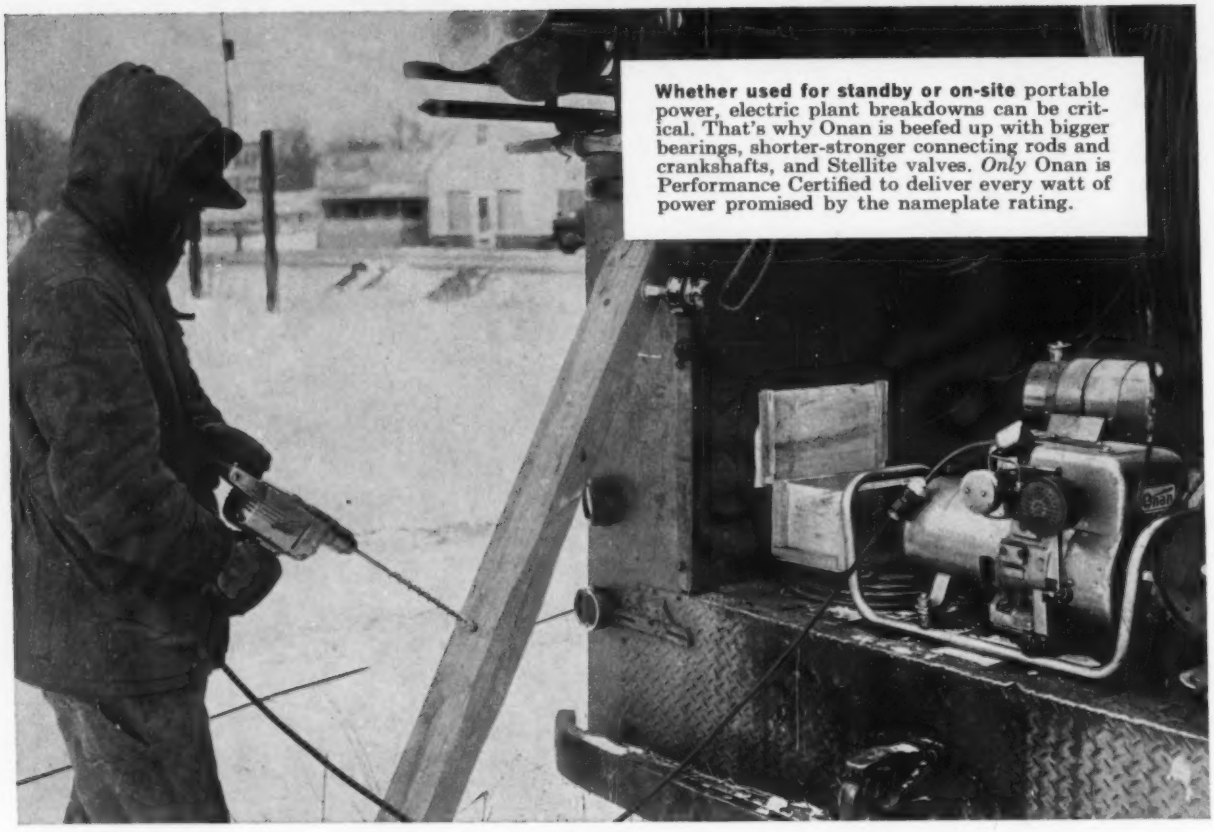
Another participant in the selling discussion, Russell Bartell, pointed out that today because of competition, the telephone industry has to provide more than service. He said, "We should be the company to whom people turn for help." He showed one way the Bell System is aiding secondary schools, science and young people—with a package which helps science teachers demonstrate wave forms. Another package, called "Sun to Sound," is an aid to science students in building an audio amplifier with a solar battery for power.

Clifford C. Pearce of Riceville, Ia., president of the United States Independent Telephone Association, set forth "Our Role in the Sixties."

Commenting upon the introduction and development of space communications, Mr. Pearce said he realized that the small telephone companies are not going into the satellite business for a long time to come. However, he warned that they had better start giving consideration to the effects satellite communications and other rapidly occurring inventions are going to have on their future operations. Above all, he said, the small companies had better start thinking seriously about what they are going to do to provide adequate circuits and facilities to accommodate new types of communications which they will be called upon to furnish.

Mr. Pearce emphasized that the telephone industry faces increased competition from other organizations selling communications. These include the

Technicalities of REA financing were the subject of discussion by this foursome at the Wisconsin telephone convention. Left to right are Mrs. Edna Lokken, general manager, Baldwin Telephone Co.; Herman H. Schafer of Washington, D. C., head of operations section, north central area REA; Lewis Seawell of Eau Claire, northern Wisconsin REA field representative, and Byron Dale of Durand, general manager, Nelson Telephone Cooperative.



Whether used for standby or on-site portable power, electric plant breakdowns can be critical. That's why Onan is beefed up with bigger bearings, shorter-stronger connecting rods and crankshafts, and Stellite valves. *Only* Onan is Performance Certified to deliver every watt of power promised by the nameplate rating.

Only Onan is certified to give you all the power promised by its nameplate

It's a fact that many electric plants on the market today do not deliver the output promised by their nameplate rating.

Every Onan plant is given a rugged workout *under full load* before it is shipped—*your assurance* that the Onan you buy is ready for hard work the day you get it.

But this isn't enough. Independent laboratory inspectors pull surprise inspections to double-check our tests and testing methods. They pull a plant off the line, run it, stop it, load it, overload it, check and recheck. Their torture test gives positive proof of Onan's quality. End result: *Onan's exclusive Performance Certification* . . . your assurance of getting every watt of power you pay for.

So when you're tempted by an electric plant "bargain," make sure its nameplate rating is not "inflated." Be sure you're getting full measure for your money. Remember, *the electric plant that short-changes you in power output is no bargain at any price!* Only Onan is Performance Certified to deliver everything the nameplate promises.

See Onan electric plants soon. Compare before you buy. You'll find your Onan distributor listed in the Yellow Pages. Call him or write direct.

PERFORMANCE CERTIFIED
We certify that when properly installed and operated this Onan electric plant will deliver the full power and the voltage and frequency regulation promised by its nameplate and published specifications. This plant has undergone several hours of running-in and testing under realistic load conditions, in accordance with procedures certified by an independent testing laboratory.
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World's Leading Builder of Electric Power Plants

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ONAN Division, Studebaker-Packard Corporation, 2605 University Ave. S. E., Minneapolis 14, Minn.

Post Office, with its facsimile mail experiment, and Western Union, with its recent phenomenal growth in specialized communications. Another avenue for considerable competition, he said, is the recent ruling of the FCC making microwave licenses for private systems available to businesses.

Mr. Pearce stated: "We can and will meet the competition if we work together. Some drastic changes may be necessary. We may see very soon some experimental tests in certain areas encouraging the use of long-distance telephone service during the low-usage hours which will be a radical change from present timing and ticketing.

"Is there a real reason why a long-distance call should be based on an initial three-minute charge from 10 p.m. until 5 a.m., when 95 per cent of the telephone equipment in this country is not in use? Why not give the customer 10, 20 or 30 minutes, or maybe unlimited time for a flat charge during these hours?"

Mr. Pearce said that with radical changes in timing and charges during these hours, the peak load conditions as we know them today could practically disappear. And, he observed, perhaps some new business could be obtained without one dollar of added investment. He went on:

"In addition, we would be meeting some of the growing competition head on in a way that would be hard to beat.

"The telephone industry is not going to sit idly by. We have the tools and the knowhow and the experience in our industry."

John Wyngaard, special correspondent, *Green Bay Press Gazette* and the *Appleton Post Crescent*, speaking on what goes on "Inside the Capitol," stated that the heart of American journalism remains today what it was 25 or more years ago, the reporter or news-gatherer on the beat. "If that reporter is lazy or stupid, then news-gathering suffers. The reporter must be above the fight—as objective as possible—uncommitted to political parties or politicians. Objectivity is not perfectly attainable, but should be the ideal striven for," Mr. Wyngaard said.

He hammered home the position that there is not enough assumption of responsibility by individuals for local, state and federal government developments. He found no correlation between the ever-growing size of government and the state of awareness and interest on the part of the electorate. The most important fact in state and local politics is the breathtaking increase in public spending, he said, and added: "Tax revision is needed."

To improve the workings of our democracy, Mr. Wyngaard urged:

D. H. Hansen, division manager, LaCrosse Telephone Corp., and newly elected president of Wisconsin State Telephone Association.

(1) Pay attention—stay informed.

(2) Keep in touch with public office representatives. Individual letters are very important.

(3) Read a good newspaper—or, better, several good newspapers.

(4) Vote. The proportion of eligible voters actually voting is a shameful blot on our republic.

(5) Get active in party politics.

Billed as a serious humorist, Edward McFaul told "How to Keep Your Foot Out of Your Mouth."

Mr. McFaul asked: "How much waste occurs in your company due to lack of understanding?" A few more words added in an order, for example, might make an order understandable and result in a happy rather than a disgruntled employe.

Mr. McFaul pointed out that we talk because we must talk. Many a lonely person has been kept from "cracking up" through the friendship of a dog, a cat or a bird, he said. Also, he observed, "When governments stop talking, they often start shooting."

Regarding talking with new acquaintances or strangers, Mr. McFaul said:

"I may know nothing about the man sitting next to me—but he is a human being, and there is always some subject this person is interested in. It remains for me to discover it.

"For example, I know much of a man's happiness depends on what happens between the four plastered walls of his home. . . .

"Recreation, sports, national or international events, or a hobby may prove to be the basis for communication."

To build bridges of understanding, Mr. McFaul suggested examining more than one side of a question. He said the truth is seldom all white, nor is the answer all black. Incidentally, he observed, the solution to the world's problems probably won't involve all democracy or all communism. "Try to see," he said, "how does it look to him?" An essential part of communication is trust, he stated in conclusion.

A. R. Colbert, chief, accounts and finance department of the Wisconsin Public Service Commission, in his "A Caveat on Depreciation Charges," reviewed the growth pattern of the telephone industry and urged watching depreciation patterns.

Mr. Colbert showed and discussed a number of graphs. Among them were:

Computation of service life and application of depreciation rate for central office equipment according to the life of each year's additions.

Comparison of combined depreciation and 6 per cent return on central office equipment with depreciation on over-all average life or on basis of lives for separate additions.

Wisconsin Telephone Co. life experience on small step-by-step dial offices.

(Continued on page 57)

L. M. Lamkins (left), manager, Manawa Telephone Co. and past president Wisconsin State Telephone Association, discusses dial service with Gordon L. Hobbs, president, Crandon Telephone Co.

FCC Favors Common Carriers In Satellite Communications

THE FEDERAL Communications Commission on May 24 adopted a First Report in its inquiry into the administrative and regulatory problems relating to the authorization of commercially operable satellite communications systems (Docket 14024). On the basis of filings in that proceeding, the commission concluded that some form of joint venture by the international communication common carriers only is clearly indicated as best serving the public interest.

The commission called a meeting of all international common carriers and certain U. S. government agencies, to have been held on June 5, for the purpose of exploring plans and procedures looking toward the early establishment of an operable commercial communications satellite system.

The full text of the commission's First Report follows:

(1) On Mar. 29, 1961, the commission adopted a Notice of Inquiry (released on Apr. 3, 1961) designed to facilitate an early solution to the administrative and regulatory problems relating to the future authorization of commercially operable space communication systems.

It was stated in the notice that it may not be feasible to have more than one or a limited number of commercial satellite communication systems due to the substantial capital investment required and limitation of radio spectrum space; and that this raises a problem as to the manner in which such a system or limited number of systems could be accommodated within the commission's policy of fostering beneficial competition in the international communication field and within the antitrust laws.

Accordingly, the notice solicited views from all interested parties as to the best plan of insuring that international communications common carriers, and others, participate on an equitable and non-discriminatory basis in a single or limited number of satellite systems.

Views were also solicited as to the legality of the suggested plan; the commission's authority to prescribe such plan; and the extent to which participants in the plan would be subject to the commission's jurisdiction. The notice directed that responses thereto be filed on or before May 1, 1961 and that replies to such responses be filed on or before May 15, 1961.

(2) Responses have been filed by 12 parties, viz., American Rocket Society; American Securities Corp. (for the future Western Union International, Inc.); American Telephone & Telegraph Co.; General Electric Co.; General Telephone & Electronics Corp.; Hawaiian Telephone Co.; International Telephone & Telegraph Corp. (and American Cable & Radio Corp.); Lockheed Aircraft Corp.; Press Wireless, Inc.; Radio Corp. of America (and RCA Communications, Inc.); The Western Union Telegraph Co. and the Department of Justice (commenting only on anti-trust matters).

(3) Replies to such responses were filed by American Telephone & Telegraph Co., General Electric Co., and Lockheed Aircraft Corp.

(4) In general, the respondents were in agreement that for economic and other reasons a single satellite communication system or a limited number of systems, financed and owned by private enterprise, would best serve the public interest. To the extent that the respondents addressed themselves to a specific type of plan, they generally favor a joint venture for the ownership and operation of a system. The principal difference among respondents in this respect related to the composition of such a joint venture.

Thus, American Telephone & Telegraph Co. and International Telephone & Telegraph Corp. favor ownership in such a system being limited to international communications common carriers, such entities participating in ownership to a degree consistent with their relative use of the system; General Telephone & Electronics Corp. would limit the ownership to both domestic and international communications common carriers; while Lockheed Aircraft Corp.,[1] General Electric Co., and the Western Union Telegraph Co. favor ownership by common carriers, the manufacturing companies, and possibly the public.

(5) Upon consideration of the responses and replies filed herein the commission has arrived at certain conclusions, the application of which will serve to foster and accelerate the ultimate establishment of a commercially operable space satellite communication system in the public interest.

(6) We have concluded that the recommendations made herein with respect to the formation or arrangement of a joint venture (or joint undertaking) composed only of existing common carriers engaged in international telephone and telegraph communication is deserving of consideration and exploration as an effective means of promoting the orderly development and effectuation of such a system. We believe that, under commission regulatory jurisdiction and subject to the conditions and safeguards hereinafter set forth, some form of joint venture by the international common carriers is clearly indicated as best serving the public interest for the following reasons:

(a) It appears to be generally accepted that because of considerations of practical economics and technical limitations, it will not be feasible for some time to come to accommodate more than one commercial satellite system.

(b) Communication via satellite will be a supplement to, rather than a substitute for, existing communication systems operated by the international common carriers, thereby becoming an integral part of the total communication system of each such carrier.

(c) The responses filed by the international carriers express a willingness and indicate a capability to marshal their respective resources for the purpose of developing a satellite communication facility.

(d) By reason of their experience in and responsibility for furnishing international communications service, the international carriers themselves are logically the ones best qualified to determine the nature and extent of the facilities best suited to their needs and those of their foreign correspondents, with whom they have long standing and effective commercial relationships and who necessarily will have a substantial interest in the operations of any satellite system.

(e) Under the Communications Act, the international carriers are obligated to furnish the public with adequate, efficient service at reasonable charges, and this obligation can best be discharged by those carriers maintaining, as far as possible, the greatest degree of direct control and responsibility over the facilities employed in this service.[2]

(7) These considerations, in our opinion, demonstrate the desirability of exploring at this time the means whereby the international common carriers may, collectively, but subject to appropriate regulation and safeguards, take such steps as are necessary to plan and effect the ultimate integration of satellite communication techniques into the fabric of international common carrier service.

At the same time these considerations would appear to militate against the suggestions which have been made by certain of the respondents that any joint venture with respect to the ownership of satellite communication systems should include participation by the public or by companies in the aerospace and communications equipment manufacturing industries.

(8) We are not unmindful of the substantial interests that these industries have in the field of space science and the important contributions they have to make to this field. Nor are we unmindful of the potential market that satellite systems represent for the sale of communications and related equipment.

However, it appears that the adaptation and integration of satellite communication techniques to international common carrier operations is within the economic means of the existing carriers, although requiring cooperative arrangements among them.

We fail to see why ownership participation by the aerospace and communications equipment industries will be beneficial or necessary to the establishment of a satellite communication

(Continued on page 40)

1. Lockheed in its reply comments withdrew its proposal that ownership in a satellite system include private interests other than the international carriers.

2. It is recognized that this new technology of communication may present numerous, unique and difficult problems which may involve several approaches and solutions of a type and nature different from those which have been used heretofore in the field of international communications. However, we are satisfied that any such new problems can best be resolved by working within the existing framework of our international common carrier industry.

ACHIEVERFONE

today's most modern mobile radiotelephone

AChieverfone, the new 150 Mc band mobile radiotelephone by AC, is specifically designed for all modern applications. Your customers can place calls to, or receive calls from, all business and household telephones.

Unlike most common carrier MTS systems with only one or two frequencies, AChieverfone has a four-channel capacity. This means that calls are rarely missed or delayed. Furthermore, AChieverfone's channels are selected by pushbuttons.

AChieverfone's modern design also includes a dramatic reduction in the number of components. Instead of three or more separate units, AChieverfone has only two — a unique, simplified control head and a compact R-T unit.

AChieverfone's styling is also as attractive as the newest of today's home telephones. Feature for feature, AChieverfone is the most modern MTS system available. For more information, write or call AC today.

SPECIFICATIONS—FCC Type Accepted

Transmitter: 144-174 Mc, 4-Channel
RF output: 22.5 watts into 52 ohm load

Receiver: 144-174 Mc, 4-Channel
Wide Band (60kc) or Narrow Band (30kc) models available (Bands converted to Narrow or Wide by substituting I F filter)

Frequency Stability: within 0.0005%

Selective Signaling: 51,000 five-digit (compatible, 2-tone, sequential) codes available

Size: Receiver-Transmitter, 21⅛" x 8⅞" x 6¼"

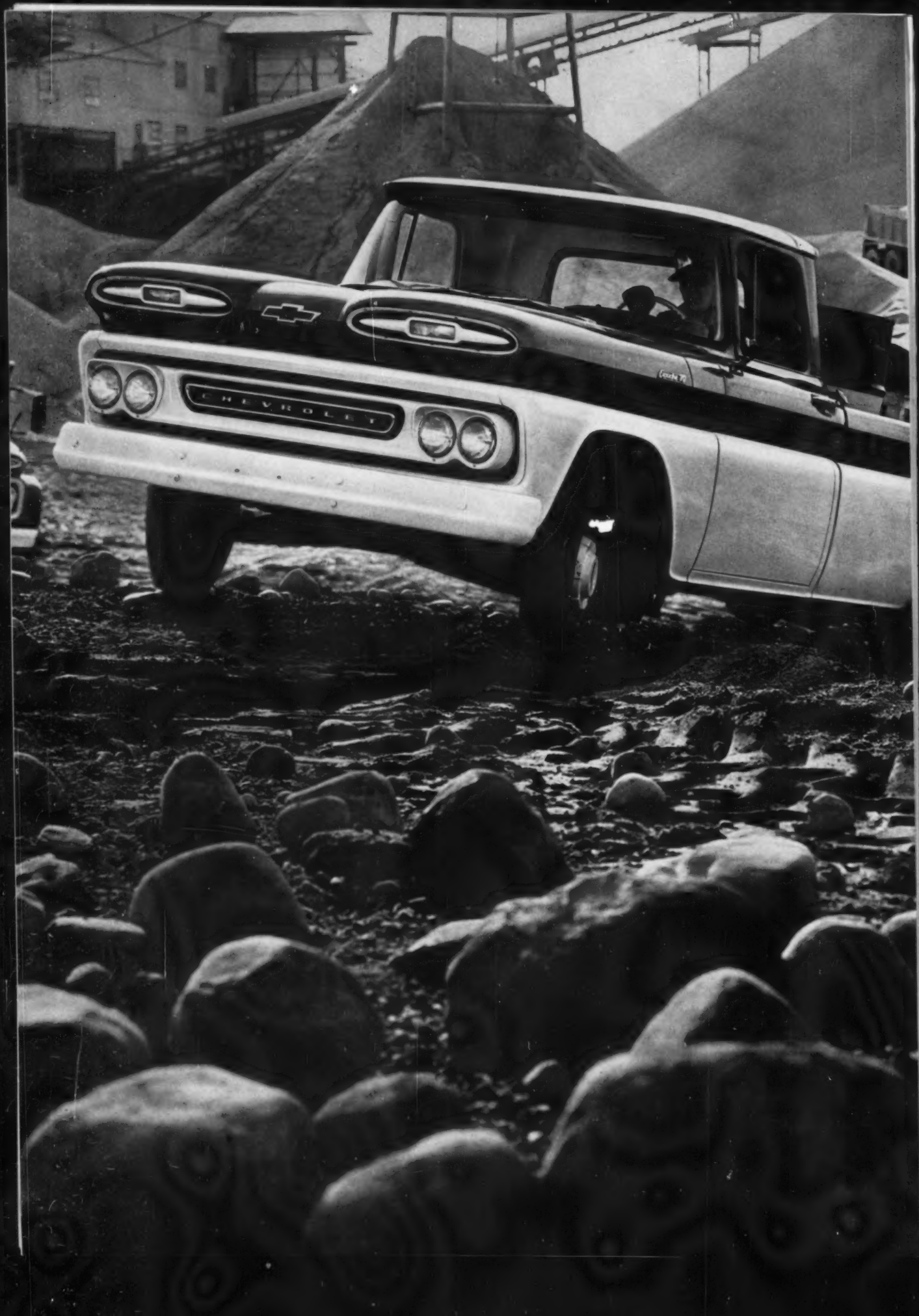
Weight: 37.25 pounds, including Receiver-Transmitter, control head and interconnecting cable

ACHIEVERFONE

An AChievement in Mobile Communications

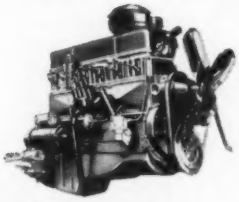
AC Spark Plug — *The Electronics Division of General Motors*

Box 622 • Milwaukee 1, Wis. • Telephone BRoadway 3-1120


CHEVROLET

HERE'S WHY IT'S A GOOD IDEA TO GET A CHEVY PICKUP:

Because Chevy's wide choice of models (there are 15 of 'em!) means you'll get the *right* pickup . . . because each is engineered to the highest standards . . . because Chevy's rugged, smooth-riding build lasts longer, costs you less to own and keeps your profits at peak levels. Chances are, whatever you consider most important, you'll find Chevrolet has thought of it first, and done most about it. Whether you get a handsome Fleetside or handy Stepside model (or possibly a Corvair 95 Rampside or Loadside or one of a half-dozen four-wheel-drives) you'll soon be convinced that buying a Chevy pickup was the best idea you ever had!



ECONOMY

The Chevrolet slant on economy makes the most sense of all, with the tight-fisted 235-cubic-inch Thriftmaster 6 (standard) leading the way. It's the most experienced money-saver going, one that's powered more payloads than any other engine in the business. It's famous for its stingy way with a gallon of gas and also for its rock-ribbed durability. It keeps your Chevy at work, making money, instead of in the repair shop, costing. And if you prefer the extra snap of V8 power, there's the eager, efficient Trademaster V8, 160-horsepower strong and available at nominal extra cost in all conventional pickup models.

CAPACITY

Chevy pickup bodies—6½, 8 or 9 feet long—are tops in cargo capacity and convenience, with a long list of bonus-built features to keep them working better and looking their best from delivery to trade-in. Both Fleetside and Stepside models feature select wood floors for better footing and quieter going, with steel skid strips to ease loading and unloading. Extra strong grain-tight tailgates with anti-rattle latches and support chains minimize bulk cargo leakage and offer firm support for extra-long loads. Fleetside body sidewalls are double-walled in the lower section, for extra rigidity and protection of exterior surfaces against dents caused by shifting cargo.

PROFIT-★★★★★ PROTECTING RIDE

All of Chevrolet's 2-wheel-drive pickups feature years-ahead Independent Front Suspension design, with ride, roadability and ruggedness that are paying off for truckers everywhere. The reduction in driving effort and fatigue that makes a bigger day's work come easy is just one part of the three-way Chevy payoff. The same shock-cushioning action protects your cargo against damage en route, and also protects the truck itself against the bumps that can batter the life out of cab, body and chassis components. Sounds too good? . . . sample it for yourself at your Chevy dealer's, soon! . . . Chevrolet Division of General Motors, Detroit 2, Mich.

1961 CHEVROLET STURDI-BILT TRUCKS CHEVROLET

system to be used by the common carrier industry. On the other hand, such participation may well result in encumbering the system with complicated and costly corporate relationships, disrupting operational patterns that have been established in the international common carrier industry, and impeding effective regulation of the rates and services of the industry.

(9) Insofar as the proposal for such participation may have been motivated by concern that without participation the manufacturers of communications equipment will be excluded from this market by the manufacturing companies affiliated with the participating common carriers, the commission is well aware of this danger.

Accordingly, it is the commission's intention to require that any joint venture that may evolve shall make adequate and effective provision, such as competitive bidding, to insure that there will be no favoritism in the procurement of communications equipment required for the construction, operation and maintenance of the satellite system.

We want to stress that we shall also take all necessary measures and establish regularized procedures to insure that such a policy is faithfully and conscientiously administered. In this connection, and also to promote the maximum degree of standardization, the commission will also require that its approval be obtained with respect to the specifications for all equipment used by the common carriers in the satellite system, including the ground terminals.

At the same time, before approving any specifications, we shall examine closely into the relevant patent situation to insure that an undesirable or dominant patent position will not hamper or frustrate the commission's objectives in this regard.

(10) It is neither possible nor feasible for the commission here to indicate all the specific features which it believes should be incorporated in any joint venture of international common carriers. These matters will, of course, require careful, extended study and formulation by the interested carriers acting under the aegis of the commission and in accordance with the procedures and policies hereafter to be provided for.

However, regardless of the plan of organization or type of entity that may subsequently evolve, it must contain clear and definite provisions which will insure that existing and future international common carriers, whether or not any such carrier participates through ownership in the joint venture, shall have equitable access to, and non-discriminatory use of, the satellite system, under fair and reasonable terms, so as to obtain communication facilities in the system to serve overseas points with the types of services for which they are licensed or authorized by this commission.

The commission, in issuing licenses or other authorizations that may be required to effectuate such joint venture, will take all appropriate measures to implement this policy and to effect such other safeguards as may be required in the public interest.

(11) We are making no determination at this time as to the desirability or need for participation in any such joint venture by domestic common carriers.

(12) In view of the foregoing, the commission hereby announces that it will invite all United States international common carriers and certain United States government agencies to attend a conference with the commission at an early date to explore plans and procedures whereunder consideration of the matters dealt with herein may go forward. A further order will be issued upon conclusion of such consideration.

Taxes Divert Investment Funds

Representative Bruce Alger of Texas, in an article in the *Nation's Business*, states that "Taxes and Spending Can Be Cut." Mr. Alger's views, as a member of the House Ways and Means Committee, which writes the nation's laws, are of interest. He sets forth what he feels legislation should accomplish on the tax front as follows:

"In pushing ahead to new legislative frontiers, the government should offer greater opportunity for the individual to improve his own condition with his own resources.

"We can meet not only our goals of more economic growth and employment, but also the threat of communism, by:

"(1) Recognizing the need for major reform of our federal tax system.

"(2) Adopting a tax program which will strengthen our capitalistic private enterprise society.

"(3) Enlisting the support of 60 million taxpayers in this reform through a widespread awareness of the potential savings as well as tax reduction involved."

Our present tax system, as he sees it, stunts personal ambition by denying rewards for effort; it has made it unduly difficult to go into business for oneself; has reduced job opportunities and contributed to inflation, and has slowed the rise in living standards.

Representative Alger states further, "The cause of these national blights is the involuntary diversion of savings—the only source of private capital—from their natural flow toward urgently needed investment fund reservoirs, to the federal Treasury . . . We have ignored at home the very lesson we are striving to teach abroad, that adequate capital funds are vital to the stability and growth of a free economy."

Anent savings, he adds, "None can refute that we must look to the savings, principally of those in the middle and upper brackets, for the venture funds to create jobs, start and expand businesses, and make products available at prices within reach."

GE Takes Issue with FCC Space Communication Ruling

Communication Satellites, Inc., a General Electric Co. subsidiary, has taken issue with a Federal Communications Commission ruling which would bar it from a joint effort to develop a commercial satellite communications system (see FCC ruling).

Communication Satellites, Inc., said it has filed formal exceptions to the FCC decision that only international communications common carriers should be included in the effort at the start.

The FCC was to have held a meeting of the common carriers June 5 to "explore plans and procedures looking toward the early establishment" of a satellite communications system. It reserved decision on whether equipment manufacturers and other groups might be allowed to participate later.

Communication Satellites, Inc., was established by GE to serve as a focal point for a joint space communications venture which it contends should include various business interests and the general public (TELEPHONY, May 20).

Contending that all the nation's taxpayers are helping to pay for the government's space programs, D. T. Atkinson, the GE subsidiary's executive vice president, said "as many as possible should be allowed to share in the practical benefits."

He said the company has recommended to the FCC that 50 per cent of the ownership of any space communication venture be made available to the public and small business.

All 10 companies which responded to the FCC's original proposal for the joint venture should be allowed to participate, Mr. Atkinson said, and should have equal rights to share in the other 50 per cent of stock ownership of the venture.

Use Skills

"It is better to wear out than to rust out."—BISHOP CUMBERLAND.

Train 'em early for tomorrow's challenge with...

AIRTRONICS ARTIFICIAL LINE

Look for much that's new and exciting to happen in the communications systems field in the next five years . . . DDD for most of U.S. and Canada . . . CAMA for more and more large toll usage areas . . . line concentration . . . electronic switching . . . a rapidly expanding demand for private line services . . . and a great deal more advances requiring special design.

Despite satellites, the workhorse of systems communications will still be the same old cable pairs. But with alternate routing and VNL you'll regard them in a new light; and you'll take a more searching look at load coil spacings, net loss and return loss, while bias and sigma (old words with new meanings) will force you to correct trunks that don't meet minimum standards.

You can best meet this challenge by launching a comprehensive training program to begin now!

AIRTRONICS Artificial Lines can be a vital tool in your technical training program for plant and engineering people. In them are combined all the essential elements for use in demonstration lectures, in laboratory classes — or both.

GENERAL SPECIFICATIONS

AIRTRONICS standard Artificial Lines accurately simulate a loaded or non-loaded cable pair of any desired length — from 600 to 39,600 feet.* Multi-position switches afford instant control over total length or load section lengths, so that coil spacings may be set to better than 1%, or as much as 10%. Common irregularities such as bridged taps, mixed loading or coils omitted can be introduced in a moment.

**Available with plug-in units for either #22 or #24 gauge cable, or mixed 22 and 24 gauge. Other commonly used gauges available on special order.*

For more detailed technical specifications, just ask us to rush you AIRTRONICS Artificial Line Brochure #1.021A. It will include equipment arrangements for a number of demonstration set-ups clearly showing the effect of equalizers, loading systems, reflections, singing points, and other characteristics.

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Program Equalizers
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AE provides business communications for large or small subscribers!

Let's talk about two completely different commercial customers in your area. The local bank needs multi-line service with intercom facilities. The holding feature and extension exclusion are essential. For this customer, our 10-A1 key system (with Type 86 phones) is ideal...

The large business office, on the other hand, needs a complete communications system to handle a large volume of incoming, outgoing and internal traffic. This company needs a PABX system with many auxiliary services. AE gives you stock delivery on six PABX boards.

For details on our complete line of business phones, PABX and PBX boards and key systems, see your AE representative. He can also furnish you with valuable sales aids to help you promote business communications equipment. To contact him, just write Automatic Electric Sales Corporation, Northlake, Illinois.

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Subsidiary of

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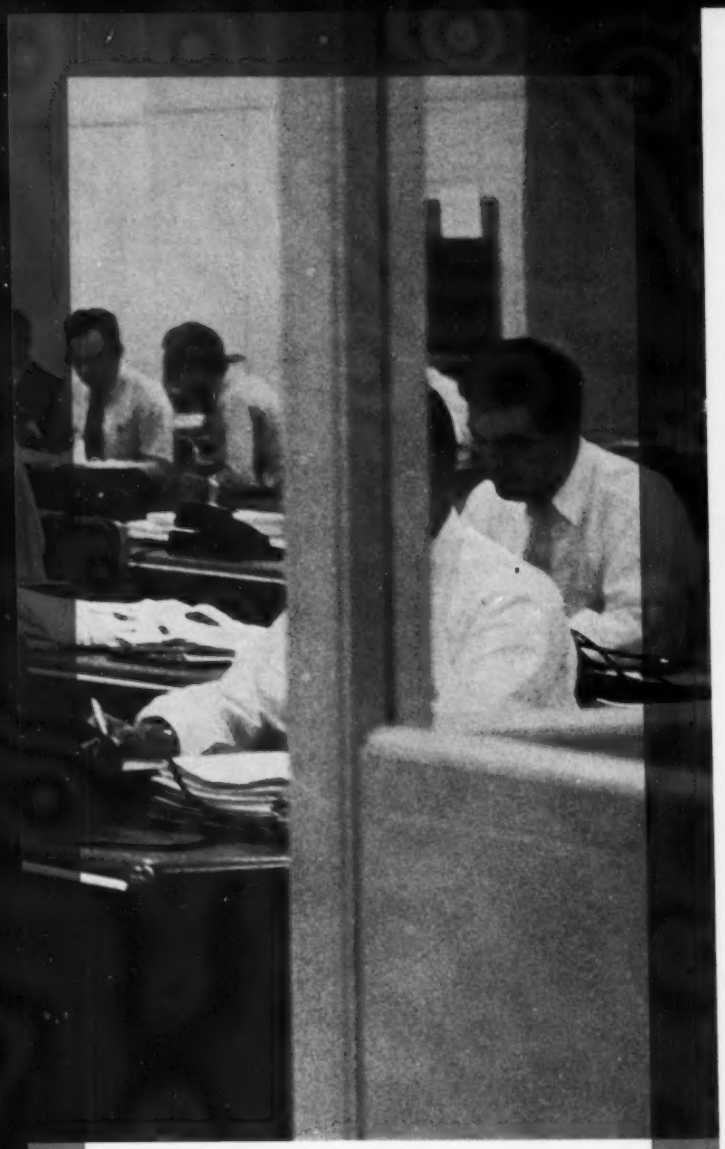
GENERAL SYSTEM



TYPE 40A PABX A complete communications system for up to 40 lines. Handles up to six inside calls and 10 outside calls at once—using standard phones. Compact attendant cabinet (shown here).

TYPE 86 PHONE Key telephone provides switchboard convenience for small commercial subscribers. Up to six central office, PBX or private lines. Dial or pushbutton intercom service. Choice of colors.

AT&T Offers $10,000 for Leads On Relay Station Explosions

THE FBI AND POLICE agencies, as this issue went to press, were still conducting an intensive investigation into the mysterious blasts, believed caused by professionally placed explosives, that wrecked three Bell System relay stations in eastern Nevada and Western Utah.

The three stations, which were blown up about 5 p.m. on May 28 and virtually destroyed, were the radio relay stations at Cedar Mountain, Utah, and Wendover, Nev., and the "K" carrier station at Knolls, Utah.

The American Telephone & Telegraph Co. announced on June 1 that $10 000 will be paid for information leading to the arrest and conviction of the person or persons responsible for the damage to the property of the telephone company. Anyone with information is asked to notify the nearest office of the Federal Bureau of Investigation.

The explosions, which were attributed unofficially to sabotage, were well planned and executed by a person or persons apparently familiar with explosives.

Following the blasts, national guardsmen in Utah, Nevada, Wyoming, Colorado, Idaho and New Mexico were called out to protect microwave and relay stations located in these six states.

AT&T Long Lines and individual Bell System telephone companies also strengthened regular security measures at microwave relay towers and repeater and amplifier stations located across the country, including stationing of armed guards, periodic checks by maintenance men and local police, and surveillance by residents in the area of installations.

The explosions interrupted both the central transcontinental radio and "K" carrier routes carrying telephone, teletypewriter and private line circuits, as well as TV channels. Despite the high number of circuits blanked out, the effect on traffic was light, it was reported.

All circuits affected by the explosions were made good by early afternoon on May 28, the day the blasts occurred. Two-thirds of the 3,000 telephone circuits, all critical services, and all TV and radio circuits, were re-established by rerouting within a few hours after the blasts.

Pre-arranged emergency service restoration plans also worked out smoothly. In less than 30 minutes after word of the explosions was received by AT&T's Long Lines and Mountain States Telephone & Telegraph Co., men and materials were moving to the three stations destroyed. Portable microwave equipment and truck-mounted towers were flown to the two radio relay locations.

AT&T and Mountain States Telephone & Telegraph Co. have been commended for re-establishing circuits destroyed by the explosions in such a short time, and for providing alternate routes for maintaining coast-to-coast communication in the event of interruption on regular routes.

Speaking of the intricate transcontinental communications system, in which millions of dollars have been invested, AT&T President Frederick R. Kappel said recently:

"The total network has tremendous flexibility. We not only have flexibility in the switching equipment itself—we also have it because the network offers so many alternate paths.

"This is of top importance in communications for defense," Mr. Kappel declared. "The first essential here is that whatever the emergency in any one place, the rest of the network will continue to operate.

"If you use a multiplicity of threads, with connections between them at many points—like a spider web—then if some threads are broken, emergency communications can follow other routes. There *must* be alternate paths. Therefore, our first great asset for defense communications is the tremendous diversified network that we already have and that is growing larger and more diversified every year."

Book Review

"ANTENNA ENGINEERING HANDBOOK," Henry Jasik, editor-in-chief; prepared by a staff of specialists; 1,040 pages; 6x9; illustrated; $22.00.

"Antenna Engineering Handbook" covers in practical fashion the broad field of antenna engineering, including such new developments as frequency-independent antennas and surface wave antennas. The book is intended to provide a readily accessible source of basic information for the antenna design specialist, and it should be of wide interest tc all electronics engineers and systems engineers who are concerned with antenna applications.

The handbook—composed of 35 chapters divided into the following broad divisions: Basic antenna types, methods, applications, related engineering and technical information — represents the first time that a large amount of practical engineering information on the antenna field has been gathered between the pages of a single book.

Each chapter is written by an expert in his particular field and includes, among other types, material on long wire, slot, loop, helical, horn, reflector, and scanning antennas. The engineering applications of receiving, transmitting, radar, air-craft, vhf and uhf communications antennas are also covered.

In step with recent advances in the field, the author includes material on large reflector-type antennas, surface wave antennas, scanning antennas, and radio telescope antennas. Special topics such as transmission lines, impedance matching and broadbanding, radome problems, propagation problems, and measurement problems are also covered.

The material, which has been organized from the point of view of the practicing engineer, is treated concisely and includes design data and information suitable for actual antenna development.

Henry Jasik, the editor-in-chief of "Antenna Engineering Handbook," is considered one of the leading antenna engineers and designers in the country, and is head of a laboratory devoted primarily to antenna research and development — Jasik Laboratories, Inc., Westbury, Long Island, N. Y.

Dr. Jasik is a Fellow of the Institute of Radio Engineers and served as past chairman of its technical committee on antennas and waveguides. He has been cited for his contributions to the theory and design of vhf and microwave antennas.

This book can be ordered from TELEPHONY.

Safety Council Sets Annual Congress, Utility Sessions

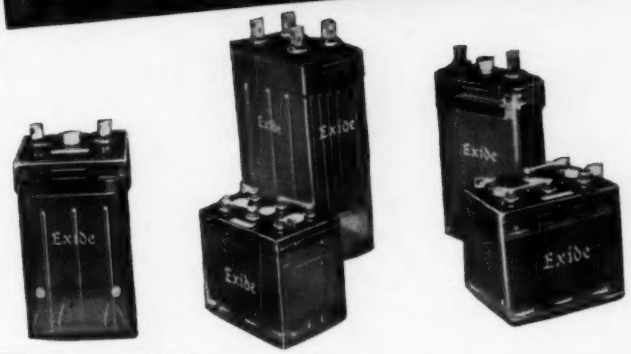
The 1961 National Safety Congress, annual convention of the National Safety Council, will be held in Chicago, Ill., on Oct. 16-20. Sessions on public utilities safety will be held at the Hilton Hotel.

Further information may be obtained from R. L. Forney, secretary, National Safety Council, 425 N. Michigan Ave., Chicago, Ill.

Testing Time

"Talent is nurtured in solitude; character is formed in the stormy billows of the world."—GOETHE, *Torquato Tasso.*

Broadest battery line
Pasted plate Tytex with Silvium* or calcium, long-life Exide-Manchex Planté with Silvium, low-maintenance pocket positive nickel-cadmium, and the new 20-year Exide-Ironclad tubular with Silvium.



Most advanced rectifiers
Use silicon diodes for highest efficiency. Range of sizes for all applications.

Coast-to-coast service
Over 200 factory-trained Exide battery and rectifier specialists—fast, capable.

THREE FACTS ABOUT BATTERY ECONOMY

1. Each application has its own requirements

There is no one battery that gives the greatest economy in all applications. But there is one best battery for your application.

2. Rectifiers should match the batteries

It's important that they have enough capacity, but it's wasteful for them to have too much. Proper sizing is an engineering job.

3. Capable service keeps cost down

It prolongs the life of your batteries and rectifiers. Insures lowest cost per year of use. Should be done by trained men.

Only Exide offers the complete power package

This includes batteries, rectifiers and service. It's your easiest way of insuring maximum economy. Write for detailed information. Exide Industrial Marketing Division, The Electric Storage Battery Company, Philadelphia 20, Pa.

**Silvium is Exide's patented corrosion-resistant grid alloy.*

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INDUSTRIAL MARKETING DIVISION (ESB)
The Electric Storage Battery Company

Courts and Commissions

Ida. Judge Orders Second Trial in Suit vs. MST&T

Judge Chase A. Clark on May 22 ordered a new trial of a $140,000 damage suit brought by C. H. Higer, an Emmett, Ida. attorney. Mr. Higer, also a member of the Idaho Legislature, alleged that he suffered severe damage to the nervous system in his left ear while using the telephone on Sept. 9, 1957, as a result of a loud telephone noise.

He sued Mountain States Telephone & Telegraph Co., but a jury in U.S. District Court ruled against him on Feb. 26, 1960. At that time, costs of $236 involved in the court action were assessed against him.

Mr. Higer then moved for a new trial, contending that Judge Clark failed properly to instruct the jury regarding an unexplained accident. He said a rule of law provides that "accident itself, if unexplained, affords reasonable evidence of want of proper care if the thing causing injury was under" the management of the defendant, and the accident "is such as does not ordinarily happen if those having such management use proper care."

Judge Clark, in granting the motion for a new trial, said a federal court ruling last year, in a similar case, convinced him he should have given the jury such instruction.

MST&T Asks to Raise Service Charges in Arizona

Mountain States Telephone & Telegraph Co. has asked the Arizona Corporation Commission for permission to increase connection, moving and change of service charges.

Also sought by the company is a new method of computing certain long distance overtime charges.

The connection, moving and change charges for residence telephones in the Phoenix-Tucson metropolitan area would be raised from $5.50 to $8.00. In other areas in the state, these charges would be raised from $5.00 to $7.00.

Business rates in all areas for these services would be increased proportionately.

The company also asked to compute some long distance overtime charges to the nearest penny instead of downward to the nearest nickel as is currently done.

Walter E. Craig, MST&T attorney, said that these increases were the only ways the company could forestall a request for general rate increases.

OK Special Charges, Sale; Set Transfer Hearing in Neb.

The Nebraska Railway Commission on May 24, authorized the Stanton Telephone Co. to apply an installation charge of $7.50 for color telephones and Ericofons, but denied a request for a monthly charge of 25 cents for such equipment. Each additional telephone of this type installed at the same time as the first instrument will carry a $5.00 service charge.

Also approved was a monthly charge of 25 cents for telephones with illuminated dials and $2.00 for telephones for the hard of hearing. The order denies a request for an installation charge of $7.50 on these two types of instruments.

Rates and charges for automatic answering and recording services were approved as follows:

	Installation Charge	*Inside Move*	*Monthly Rate*
Automatic answering (only) includes answering tape	$10.00	$5.00	$8.00
Automatic answering and recording equipment*, including either answering tape or one answering record, but not both	15.00	5.00	15.00
Automatic answering and recording set with remote call back	20.00	5.00	22.00

*Includes erase button, automatic stop and headphone jack.

On the same date, the commission authorized the Northeastern Telephone Co., Blair, to acquire the property of the Oakdale Telephone Co. (TELEPHONY, May 20). The commission also approved a certificate of convenience and necessity for the Northeastern Telephone Co. to serve present and prospective customers in the Oakdale area; approved an REA loan of $582,000 and authorized a 4 per cent composite depreciation rate on the combined company's depreciable property.

The Northeastern company now serves 536 subscribers. Through the acquisition of the Oakdale properties it proposes to eventually serve a total of 896 subscribers.

Gross monthly rates, subject to 50 cents prompt payment discount, were approved for the Northeastern company's Elgin and Oakdale exchanges to include two-way extended area service between these exchanges. New rates will be effective with the conversion of the exchanges to dial operation and are as follows:

One party business	$9.50
Two party business	8.75
Rural business	7.50
One party residence	6.50
Two party residence	5.75
Rural residence	5.50

•

A hearing was to have been held on June 2, on the application of the Chapman Telephone Co. to transfer its exchanges at Chapman and Archer to the Hay Springs Telephone Exchange.

OK Rates for One; Study Raise at 2nd N. Y. Exchange

The New York Public Service Commission approved, effective June 1, a rate increase for the 325 subscribers of the Gilbertsville exchange of the Chenango & Unadilla Telephone Corp., Norwich.

The increase, effective with cut-over to dial, will produce an estimated $1,700 in additional revenue. The commission has under study a similar increase for 970 subscribers of the Whitney Point exchange.

A hearing is scheduled for June 26 on whether Lisle area subscribers of the Whitney Point exchange should continue to receive toll-free service with Center Lisle, which is served through the Marathon exchange of Western

(Continued on page 58)

Here is the tool that permanently anchors a wire loop fastener to concrete with less than ten taps of a hammer. There's no drilling and there's no plugging.

It's called Shure-Set®

It does plenty of other fastening jobs too. Junction boxes, conduit clips, gutters. Heaters, signs, Wiremold. Using Shure-Set you can attach almost anything to concrete and other masonry materials. And you do it rapidly.

How is it possible? A special steel fastener is inserted at one end of Shure-Set, your hammer blow is directed against the large movable anvil at the other end. The easy-to-hit anvil concentrates the force of the hammer blow onto the fastener, but within the confines of Shure-Set's precision bore. The fastener can't waver or skew off. Every swing of the hammer drives it straight and true into the concrete. (Note: powder charges are *not* used in this tool.)

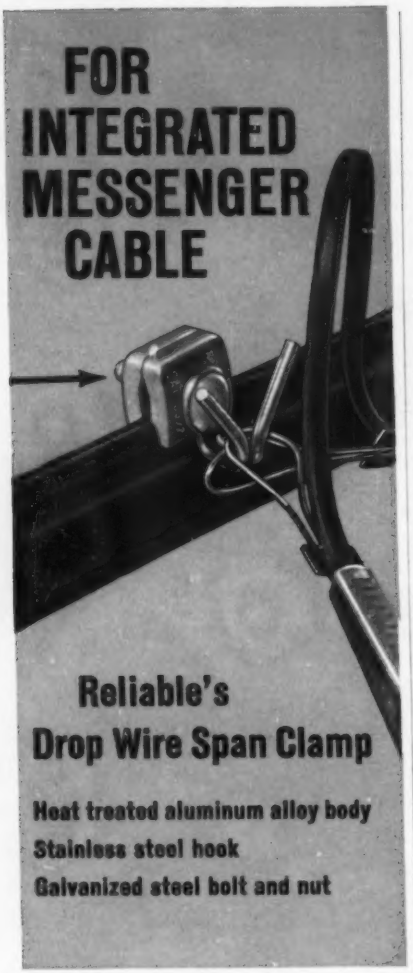
And Shure-Set's austempered steel fasteners *never* bend or break. Austempering has given them the ideal metallurgical properties for penetrating hard construction materials (it's the same heat treatment we give our *powder-driven* fasteners). These steel drive pins ("nails") and threaded studs make a strong, permanent, compressive bond to concrete. For a light-duty fastening, you won't find anything stronger.

And for the few cases—such as tile or glazed brick—where "tap-and-turn" work is unavoidable, a drill holder attachment is provided for converting Shure-Set into a superior masonry drill. Still another attachment fits it for use in fastening sheet metal to sheet metal.

Shure-Set is on its way to becoming a tool box standard because of its immense versatility. And because it pays for itself by saving time. Usually on the very first job. It also saves a lot of (put your own price on it) perspiration.

To find out where to buy Shure-Set nearest you, look under TOOLS in the Yellow Pages of your directory.

297-F Winchester Ave., New Haven 4, Conn. WINCHESTER-WESTERN DIVISION Olin



The No. 5577 Drop Wire Span Clamp is engineered for all Integrated Messenger Cables. A specially designed groove in the clamp protects the polyethylene web while providing a secure grip over the messenger jacket. It accepts 1 to 3 mid-span drops under full tension (plus wind and ice loading). Take-offs can be made at any angle. The square shank bolt, with nut, tightens securely with a wrench.

SEND *for your sample today.*

Reliable

A Symbol of Integrity Since 1909

ELECTRIC COMPANY

Franklin Park, Illinois

"What Caused the Fire?"

By John A. Bracken

WHEN AN exchange we shall refer to as the Littletown telephone exchange was destroyed by fire one night last winter, the townspeople were astonished. They couldn't believe it.

"What caused the fire?" they asked. This was a good question. An investigation revealed that the fire was due to "two cents."

Two copper pennies had been placed in the fuse block supplying the building with electric power after the regular fuses had blown. The circuit (probably overloaded) that blew the original fuses later turned into a torch after the pennies were substituted for the fuses. Thus started a fire that unfortunately destroyed the building, its contents and telephone service to the community.

Inasmuch as fires of electrical origin are generally caused by such abnormal conditions as a short circuit, overloaded circuits, etc., here are some of the more common hazards which cause additional statistics to be added to a fire report chart.

(1) Using oversized fuses whose electric-current-carrying capacity is greater than that of the power circuit conductors, thus nullifying the protection the fuses are expected to afford in case of a short circuit, overload, etc. Consequently, the importance of using fuses of proper capacity in relation to the circuit to be protected cannot be overemphasized.

(2) Using dangerous substitutes as fuse replacements.

(3) Short circuits.

(4) Over-heated wiring due to overloads.

(5) Too many lights or electrical appliances on the same circuit.

(6) Use of multiple attachment plugs and long extension cords, because an insufficient number of outlets are available.

(7) Pulling on the cord, instead of the plug, when disconnecting appliances.

(8) Lamp cords which are run under office rugs and which are then stepped on.

(9) Long extension lamp and soldering copper cords becoming kinked or being stepped on while lying on the floor, eventually becoming badly damaged and a fire hazard.

(10) Badly worn or defective appliance and portable equipment cords.

(11) Using unsafe appliance and lamp cords. Only cords and plugs should be used which are tagged with UL (Underwriters Laboratories Inc.) labels or the labels of another equally reputable electrical test organization.

(12) Excessive arcing at a defective power circuit switch.

(13) Defective or improperly installed power wiring. The National Electric Code is the governing standard for electrical wiring.

Detecting and correcting hazardous conditions, liable to cause an electrical fire as outlined above, requires constant vigilance.

It is truly said: "An ounce of prevention is worth a pound of cure."

Make Reading Meaningful

"Learn to be good readers, which is perhaps a more difficult thing than you imagine. Learn to be discriminative in your reading; to read faithfully and with your best attention, all kinds of things which you have a real interest in — a real, not an imaginary — and which you find to be really fit for what you are engaged in."—CARLYLE.

Buys Controlling Interest In Quebec Company

Control of 98 per cent of the stock of Telephone d'Harricana et Gatineau, Val d'Or, Quebec, Canada, has been purchased by Northern Telephone Co. Ltd., New Liskeard, Ont., it was reported on May 27. The acquired company serves 5,400 stations. It also owns long distance leads running south from Val d'Or to meet Bell Telephone Co. of Canada lines near Maniwaki, Quebec.

Northern Telephone is financing the purchase, in part, by issuing 2 million dollars of 5½ per cent cumulative redeemable preference shares.

Best Use of Resources

"A well-employed and prosperous community can buy and consume. An ill-employed community cannot buy and consume. This is the solution of the whole matter; and the whole science of political economy has not one truth of half so much importance as this."—DANIEL WEBSTER.

Moral of Broken Sticks

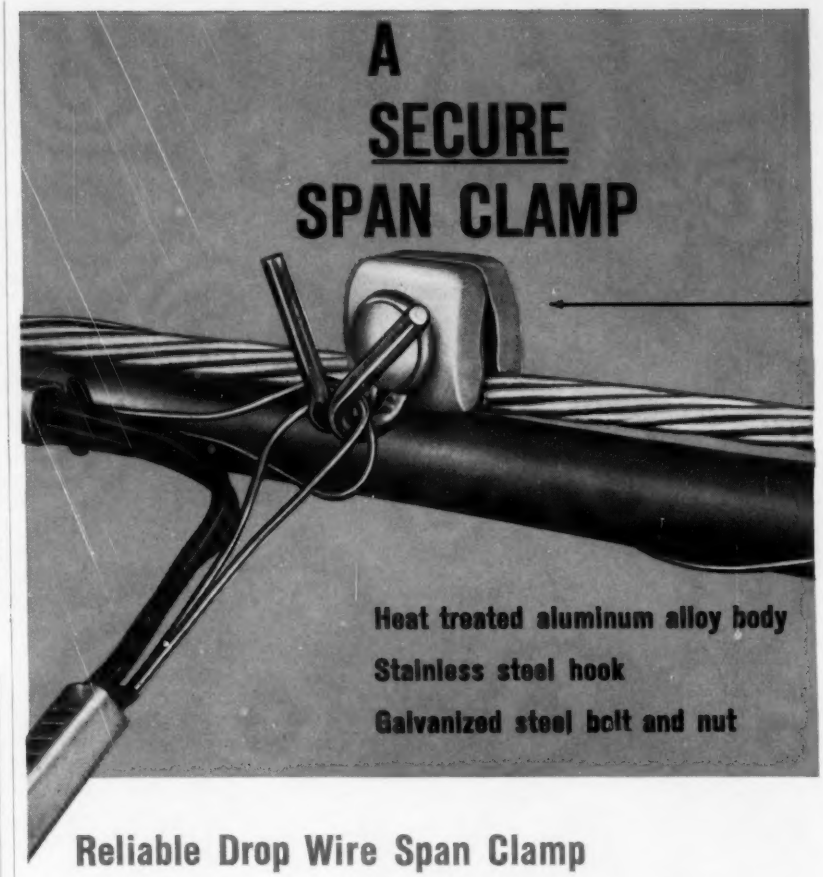
The divide-and-conquer motive as a subtle tool of the enemy is not new, for Thomas Bewick in *Fables of Aesop*, told the story long ago. It is a warning Americans should bear in mind. For those who have forgotten the fable, it goes like this:

"An old man had several sons, who were constantly quarrelling with each other, notwithstanding he used every means in his power to persuade them to cease their contentions, and to live in amity together.

"At last, he had recourse to the following expedient: — He ordered his sons to be called before him, and a bundle of sticks to be brought, and then commanded them to try if, with all their strength, any of them could break it. They all tried, but without effect: for the sticks being closely and compactly bound together, it was impossible for the force of man to break them.

"After this, the father ordered to bundle to be untied, and gave a single stick to each of his sons, at the same time bidding them to try and break it. This they did with ease, and soon snapped every stick asunder.

"The father then addressed them to this effect: O, my sons, behold the power of unity! for if you, in like manner, would but keep yourselves strictly conjoined in the bands of friendship, it would not be in the power of any mortal to hurt you; but when you are divided by quarrels and animosities, you fall a prey to the weakest enemies."



Reliable Drop Wire Span Clamp for 1/4" to 7/16" strand

Accommodates 1 to 3 mid-span drops under full tension (plus wind & ice loading). The stainless steel "Y" shaped hook will take several drop wire clamps. Take-offs can be made at any angle. The square shank bolt, with nut, tightens securely with a wrench.

Send for your sample now.

Reliable
ELECTRIC COMPANY
Franklin Park, Illinois
A Symbol of Integrity Since 1909

DATE_____

Please send me a sample Span Clamp

NAME_____

COMPANY_____ POSITION_____

STREET_____

CITY_____ ZONE_____ STATE_____

What About Employment in the Wire Communication Fields?

By JOHN D. McMAHON*

EACH DAY we are regaled by the printed word and by ear about the marvels of new scientific advances: "Speak to each other via the moon," "use a vest-pocket transistorized radio call system," or "make a telephone call from a train, a plane, or your own automobile."

Today, a prospective new employe in the telephone and communications industry may well ponder whether he (or she) will be starting on the right path by learning the fundamentals and the use of wire and cable; and he may easily reason that effort might be better applied in something more sophisticated such as satellites, or radio, or in study of any one of the newer modes of point-to-point communications such as:

(1) Auroral reflection.
(2) Ground scatter (Ionosphere Propagation).
(3) H-scatter.
(4) Ionospheric reflection.
(5) Ionospheric scatter.
(6) Line-of-sight relay.
(7) Meteor-burst communications.
(8) Obstructed-path relay.
(9) Satellite communications.
(10) Surface wave.
(11) Sub-surface propagation.
(12) Transverse-field mode.
(13) Tropospheric ducts.
(14) Tropospheric scatter.
(15) Waveguide, ELF and VLF.
(16) Whistler mode.

Future plans of the common carriers present an encouraging picture, and the total investment in the operating industry at the end of Dec. 1959 was 26.34 billion dollars; six months later, by mid-1960, it had reached 27.34 billion dollars. As for communications wire and cable, the total sales in this country in 1950 were approximately 150 million dollars. Ten years later, in 1960, they had almost tripled and were more than 400 million dollars. Planned expenditures for 1961 by the Bell Telephone System include, among the total amount to be spent of 2.5 billion dollars—the extension of new underground transcontinental coaxial cable for 52 million dollars; by-pass routes for another 12 million dollars, submarine cable to Antiqua, Jamaica and Bermuda for about 14 million dollars, and 9 million dollars for a new cable laying ship. You will note that this represents a total of nearly 90 million dollars to be spent in one year on wire communications by one organization.

*Mr. McMahon has spent more than 27 years in the wire communications field. Presently he is a Communications Engineer with the Defense Systems Department of General Electric Co. in Syracuse, N. Y.

J. D. McMAHON

The domestic and foreign sales of the Communications Equipment Manufacturing Industry for 1960 amounted to a record high of 2.93 billion dollars, of which about 30 per cent were to the government for equipment related to defense projects. Even though most experts agree that 90 per cent of future innovations will be based upon, and be similar to, systems and methods that are presently in every-day use, there is much to be done in new switching and termination equipment, new cable sheath, and in insulation research focused pretty much at the chemical world of plastics; which, incidently, appears to be the main contributor to the present state of near chaos in guided missile wire and cable problems. There will be more and more wire communication services of all types, and line concentrators and carrier techniques will become a part of standard engineering design.

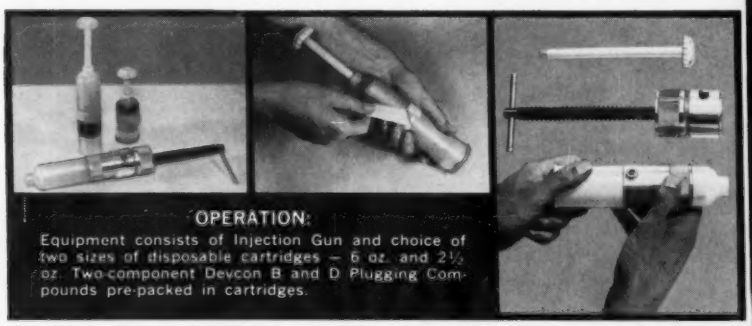
Everyone is concerned about spectrum overcrowding, and the end of the extension of the useful radio spectrum seems now more than just in sight, in view of the difficulties of transmission power generation, the high attenuation of center frequencies, and poor receiver sensitivity encountered at frequencies above 100,000 megacycles. We have had alleviation in a small manner by the transfer of services to higher frequencies, but we are still confronted with an economy of scarcity in spectrum al-

NEW DISPOSABLE CARTRIDGE METHOD

STOPS CABLE PLUGGING PROBLEMS

Safe · Quick · Easy · No Cleaning
No Skin Contact
Use B and D Compounds

Save time in mixing epoxy resin and activator. Eliminate any cleaning of gun. B COMPOUND is recommended for plastic insulated cable while the D COMPOUND is applicable for paper insulated cable. Both B and D resins are available in 6 and 2½ ounce cartridges. The LD-755 Gun has a lifetime warranty.



OPERATION:
Equipment consists of Injection Gun and choice of two sizes of disposable cartridges — 6 oz. and 2½ oz. Two-component Devcon B and D Plugging Compounds pre-packed in cartridges.

1. Remove tape clinch band from cartridge.
2. Rotate dasher rod until material is completely mixed.
3. Remove dasher rod and insert cartridge in Injection Gun for application.
4. Attach fitting to cable and eject resin.
5. Remove cartridge from gun and discard.

Patent No. 2,838,210 (others pending)

Send me complete instructions and prices.

Name _____

Company _____

Address _____

City _____ Zone ___ State ___

The next time you order, SAVE TIME, SAVE CONFUSION

DIALINDSAY SERVICE

LINDSAY TELEPHONE SUPPLY COMPANY

360 EAST HIGHLAND RD.
NORTHFIELD, OHIO
Telephone: IMPERIAL 7-7181

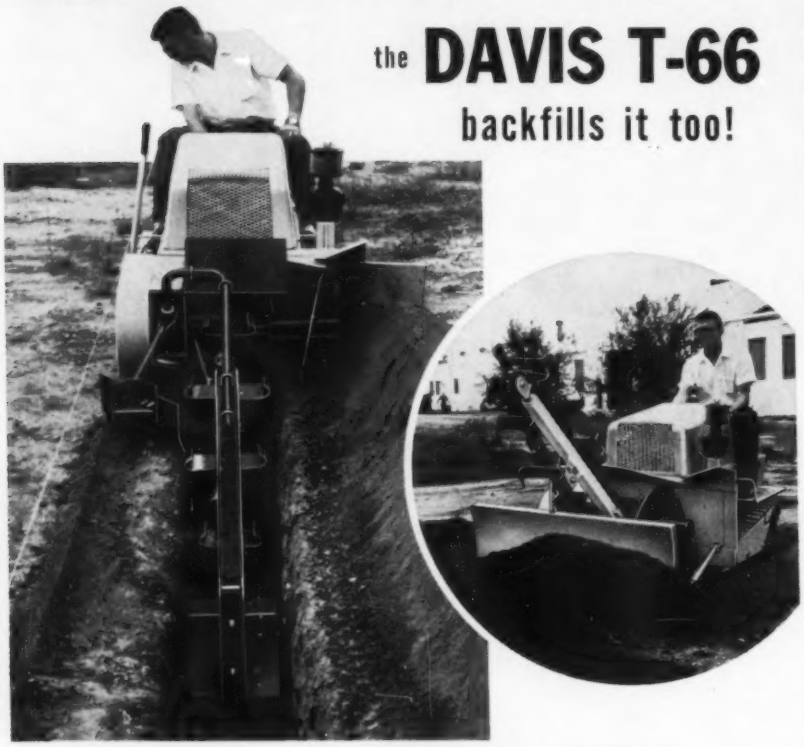
•

590 PIEDMONT AVE., N. E.
ATLANTA, GEORGIA
Telephone: TRINITY 5-7091

CALL US COLLECT, PLEASE!

Digging the ditch is only half the job...

the DAVIS T-66 backfills it too!



Coast to Coast... Border to Border... and in many foreign countries Owners Acclaim the T-66!

When you've dug a trench you're only half done; you have to backfill it, too! Only the Davis T-66 does the whole job, and does it with profit-making performance — because it is **designed** as a trencher and a backfiller. Just ask any user. Large track shoes, a unique hydraulic drive, and the T-66's extra-heavy 1400-lb. weight give ground-gripping traction for accurate ditching control and backfilling power. No erratic rubber-tire bounce. Hydraulic boom lets you have absolute control over digging depth as well as backfill blade. Instant Forward/Reverse provides unmatched maneuverability for backfilling. It digs 4" wide to **66" deep**, or **12" wide**, 30" deep, and at varying widths and depths in between. Attachments available for trenches **16" wide**, 24" deep and **flush** alongside walls or fences. You can buy with confidence because the T-66 is built to withstand the severest tests, and is produced by men who are leaders in the design of digging equipment.

the DAVIS HUSTLER UTILITY TRAILER

This 2000-lb. capacity, tilt-bed trailer for the T-66 and other loads has low center-of-gravity stability and load equalization suspension system. Sides optional.

the DAVIS PUP TRENCHER
Self-Propelled

Digs by itself. This self-propelled trencher is driven by a six-speed winch mechanism. A productive tool for trenches 2"-3" wide to 36" deep, or 4" wide, 18" deep.

We Welcome Competitive Demonstrations!

The performance of the T-66 creates confidence that invites comparison so you know why it is the standard bearer of trencher value. Ask about its 90-day unconditional guarantee!

DAVIS MFG. INC.
1515 S. McLean Blvd., Wichita 13, Kan.

Please send me description T-66 literature and the name of my DAVIS dealer____. I am also interested in the Davis Pup____ Davis Hustler____.

NAME_____

ADDRESS_____

TOWN_____ STATE_____

D2-261

location, and may well expect that the demand for spectrum space will increasingly exceed the supply.

In the United States alone, of 49 allocation bands, averaging only 7.5 per cent in bandwidth, the approximate percentage of the microwave spectrum allocated exclusively to a given class of user is:

Government	40 per cent
Common carrier	17 per cent
Aeronautical and radio navigation	15 per cent
Public safety, industrial and transportation	10 per cent
Mobile	8 per cent
Studio transmission links and remote pickups	7 per cent
Amateur	0.7 per cent
Miscellaneous	2.8 per cent

It is apparent that these multiple demands may well preclude an inexhaustible source, and reliance will be on future utilization of new techniques, including expanded use of wire and cable communications.

Aside from the tremendous future available to all common carriers in the use of wire and cable for transmission of voice and data communications, it is prudent to bear in mind that in today's area of guided missiles it is no longer uncommon for just the ground cable system alone to cost more than 3 million dollars per site, and in some instances as much as 12 million dollars per site.

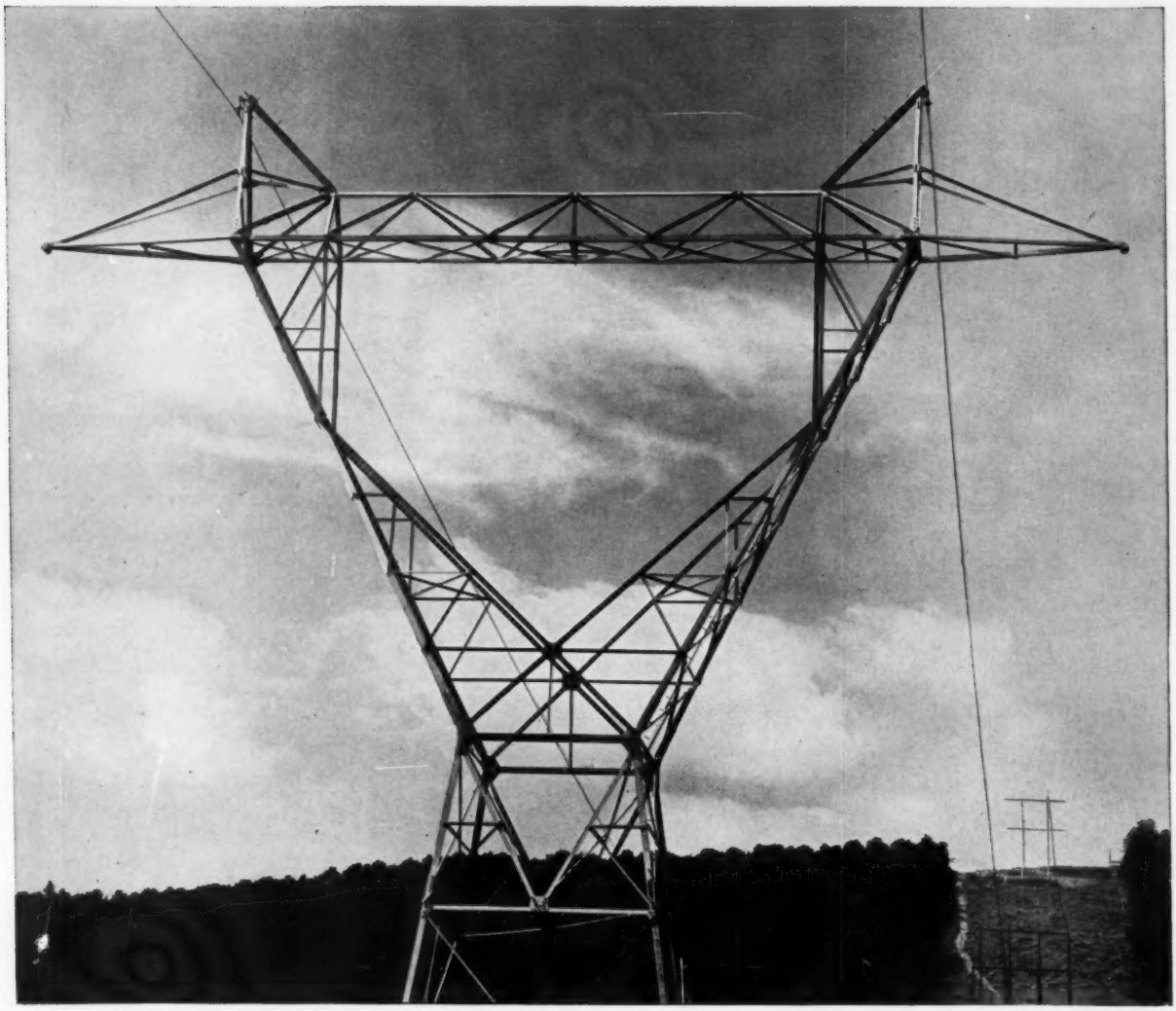
The General Electric Co., through its ever increasing developments in research and manufacturing, recognizes the growing needs in wire communications and its engineering and other personnel would be the first to encourage newcomers as to the excellent future assured for them in this still very much up and coming field.

Commercial Safety Improved

Studies made by The Travelers Insurance Cos. show that the safety record of commercial vehicles is far better than that of the private passenger car.

Correction

In the item titled "Two Independents Choose Same Time to Start DDD & PPCS," which appeared on page 62 of our Apr. 22 issue, W. Gilman Snyder and Elwin Bagley were inadvertently connected with the Western California Telephone Co. in the photo caption. Mr. Snyder is president, and Mr. Bagley general manager, of the Western Telephone Co., Weaverville, Cal.



Nation's first 460-KV system is protected by Bethlehem overhead ground wire

The nation's first operating 460-KV power transmission line was recently energized by Pennsylvania Electric Company in mountainous terrain between Claysburg and Saxton, Pa. Since operating conditions are abnormally severe, an extensive testing program will be carried out, including studies of lightning strokes.

Protection against lightning is of major importance in extra high-voltage lines. For this reason, PENELEC chose Bethlehem's bethanized "C" coated, ½-in. diameter, extra high-strength strand for 6½ miles of the 13-mile line. Bethanized strand, with its smooth coating of pure, electrolytic zinc is ideal for static application. It acts as a shield to the conductors by intercepting lightning strokes and grounding them.

Today's long spans make overhead ground wires susceptible to fatigue caused by vibration. Steel, because of its high endurance limit, is best able to withstand these fatigue stresses. Bethanized wire has comparable endurance limits to uncoated steel wires, and fatigue tests indicate its superiority over other types of coated wire for this type of service.

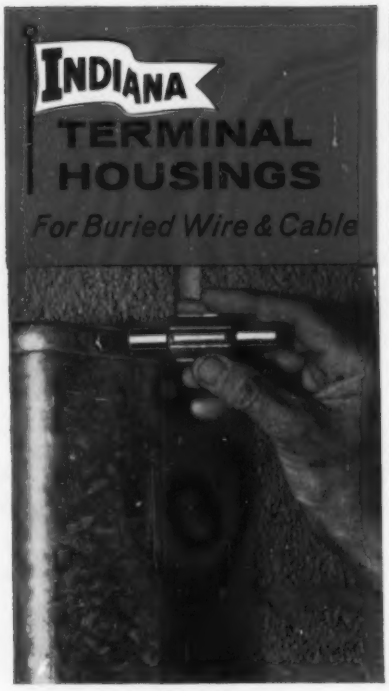
For full information on the wide range of sizes and strengths of bethanized strand, get in touch with the nearest Bethlehem sales office.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
Export Sales: Bethlehem Steel Export Corporation
Distributor: Joslyn Mfg. & Supply Co.

Steel *for Strength ... Economy ... Versatility*

BETHLEHEM STEEL

BETHLEHEM STEEL



ENGINEERED TO SAVE YOU TIME AND LABOR

ONE screw like this is all that's required to complete the assembly of INDIANA Pedestal-Type Terminal Housings. This is typical of the time and labor-saving features to be found in these carefully engineered housings for buried wire and cable.

Made of heavy gauge steel and galvanized AFTER forming, INDIANA Terminal Housings provide long-lasting protection to terminal blocks, loading coils and/or splicer. Both pedestal and pole-mounted types, designed to accommodate from one to 400 pairs, are available.

Ask your distributor about these dependable, economical housings, or write for Bulletin No. TH-101R.

INDIANA
Steel & Wire Company, Inc.
Muncie, Indiana

IN THE NATION'S CAPITAL

Continued from page 18

ministration, several employes were incredulous when a caller identified himself as "The President." Their "sure-it-is-and-I'm-the-man-in-the-moon" replies elicited exasperating confirmation when the Chief Executive assured them, "This *is* the President."

Now they're getting used to the idea. Incoming calls to the White House have jumped to a daily average of about 10,000 compared with the 6,500 to 7,500 average during the eight years of the Eisenhower Administration. Several times since January 20, a flood of simultaneous calls has blown a fuse on the board, but telephone repairmen had the problem corrected within minutes.

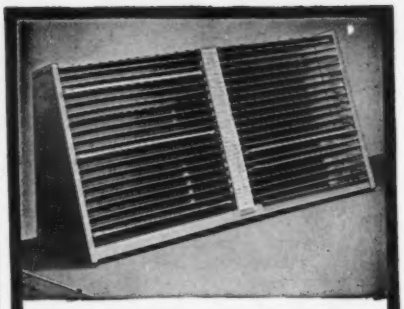
The telephone volume at the Executive Mansion gets a boost from the dozens of calls each day by pre-school swains for three-year-old Caroline Kennedy. Whenever the little lady's picture appears in the newspapers, admirers call wanting to discuss her hamster, ducks, playhouse, or swing set with her. Miss Kennedy, who has been known to pick up the telephone to call long distance to her granddaddy or some family friend, would probably enjoy chatting with her young admirers, but tactful switchboard operators suggest that the juvenile callers write Caroline a note instead.

Many callers ask to speak with John F. Kennedy Jr. (age eight months) who so far, has refrained from taking any calls.

Twelve switchboard operators, who staff the telephone room 24 hours per day, seven days per week, screen all calls to the President and Mrs. Kennedy, attempting to funnel calls to staff people, or suggesting that the matter be communicated in a letter.

It is difficult to comprehend how the President could carry out his duties without the telephone, but President Kennedy is only the fifth President who has had a telephone on his desk. Although President Rutherford B. Hayes installed the first telephone service in the White House in December, 1878, the telephone remained in a booth in the corridor outside the President's office for 50 years. Herbert Hoover was the first President to install a telephone on his desk.

Nearly every day the White House operators receive telephone calls for President Eisenhower and even President Truman. The callers are always quite surprised that those gentlemen no longer reside at 1600 Pennsylvania Avenue, which illustrates that there's



Trouble Recorder Card Rack

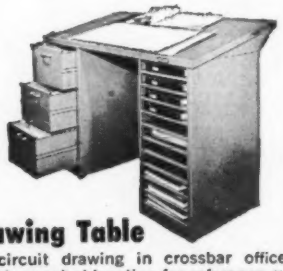
For fast orderly sorting of Trouble-Recorder cards, has 38 card slots in two banks with index strip between. Base is 38" by 8". Height 15". No. D-30325-1.

Telephone Office Equipment

to lighten your work and improve efficiency

Work Bench

For repair, assembly, test and paper work. Top drawer divided into 24 compartments for parts and tools. Large file drawers are for circuit drawings. 54" x 25" top covered with masonite. Height 36". Drawers may be inserted from back to reverse position of kneehole. No. D29978-3.



Drawing Table

For circuit drawing in crossbar offices, provides central location for reference material. Masonite top is 30" x 60". Height 36" at front, 42" at rear. Three large file drawers at left for drawings. Eleven shelves at right are 2½" high, 14" wide, 18" deep for sketches, sequence charts, book type SD sheets, trunk serials, etc. No. D30326-1.

Color of all units: Baked-on gray enamel unless otherwise specified.

TWIN POST
Neubauer
MANUFACTURING CO.
517 LOWRY AVENUE N.E.
MINNEAPOLIS 18, MINN.

always someone who doesn't get the word.

A Professor Looks at the FCC

Those who remember when the FCC was still a young thing and most of its troubles were growing pains, will recall a very able staff official who used to be executive assistant for former FCC commissioner and later Chairman Paul A. Walker. This was Walter B. Emery, who came to Washington in 1934—the statutory birthday of the FCC— to join its legal staff. It proved to be quite a lasting combination, even though Emery did interrupt it for a period of teaching at three universities —Oklahoma, Ohio State, and Wisconsin —before returning to the FCC in 1943. He finally left the FCC in 1952 and has since been identified with educational television and the faculty of the Michigan State University.

The reason for recalling all this is that Professor Emery has recently written a very fine book on the FCC, although it deals mainly with the broadcasting and television phases of the commission's work. The title of the book is "Broadcasting and Government: Responsibilities and Regulations" (Michigan State University Press; price $7.50). But for those who have much business with the FCC it is a very valuable book to have around because it is one of the most carefully documented works on that commission that this observer has ever seen.

Of interest to telephone people is the thorough history of the FCC which it contains, with emphasis on the social and economic factors of broadcasting. Professor Emery outlines the statutory jurisdiction, powers, and duties of the FCC and its functions and purposes. He charts its organization and administrative machinery in a broad way. If you want to learn how to apply for a broadcasting license or want to find out what the rules of good conduct in broadcasting are, you can find them in this book.

House Committee Approves $345 Million REA Budget

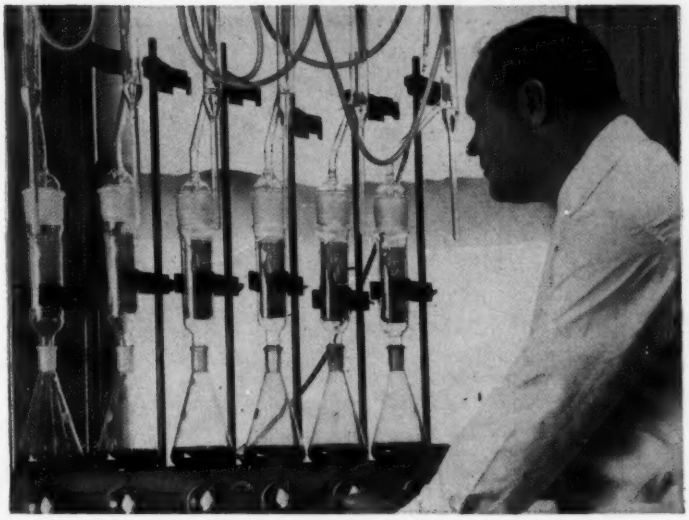
The House Committee on Appropriations has reported as follows on Rural Electrification Administration appropriations for the fiscal year beginning July 1, 1961:

"Loan Authorizations—The 1962 budget proposed authorizations of 195 million dollars for electrification loans and 150 million dollars for telephone loans. The committee has included these amounts in the bill. However, it has placed a portion of each item in a contingency reserve, in accord with the practice it has followed for a number of years.

TECHNICAL BRIEF NO. 60-1

By D. L. DAVIES, *Manager, Technical Dept.*
Wood Preserving Div., Koppers Company, Inc.

USE OF THE ASSAY METHOD TO DETERMINE RETENTION IN POLES



PRESENT STATUS

The Assay Method of determining preservative retention in pole charges has been described in Koppers Technical Bulletins W-101 and W-102. Following is the status of the Assay Method as a replacement for the less accurate gauge method of determining preservative retention.

The Western Electric Company, Inc. over 2 years ago made the Assay Method a part of its specifications on all new pole contracts. This major specification change was adopted to eliminate "weak sister" charges — charges which meet standard specifications by other measurement tools, but which in reality do not contain sufficient preservative to provide long-lasting protection.

The Rural Electrification Administration in April, 1960 issued new specifications which make mandatory that determination of retention in poles be made by the Assay Method. Many REA utilities have suffered financial loss from premature pole failures. They, too, want to eliminate the "weak sisters".

The Federal Government has a tentative specification TT-W-571f, now being reviewed by industry, which also calls for the Assay Method for determining retention (without alternates) in both poles and piles.

The AWPA adopted the Assay Method for determining retention in poles as a "full standard" at the April 24-26, 1960 meeting.

HOW TO APPLY THE ASSAY METHOD

In applying the Assay Method to poles, the specifications require that the outside ½" of the pole section be discarded. This section usually contains about 14-lb. preservative per cubic foot. Specifications further require that the next 1½" be assayed for retention. Therefore, an 8-lb. normal gauge retention charge must have a minimum of 6-lbs. per cubic foot in this zone. A 10-lb. treatment must have 7½ lbs. and a 12-lb. treatment must have 9-lb. in the assayed zone. No undertreatment allowance is permitted. Adoption of these retention requirements represents the most significant advance in standards for pine pole treatment since the adoption of 2½" or 85% sapwood penetration requirement in the late 1930's.

ANY COMPANY CAN ADOPT THE ASSAY METHOD

The status of the Assay Method for determining retention has advanced to the stage that any company can adopt it by a simple notation on the purchase order specifying that "poles are to be treated to a retention of *x* pounds/cubic foot as determined by assay".

• • • • • • • • • • •

For the full report on using the Assay Method, or answers to technical questions on poles or pole treatment, write: Koppers Company, Inc., Wood Preserving Division, Technical Dept., Room 757, Koppers Building, Pittsburgh 19, Pa.

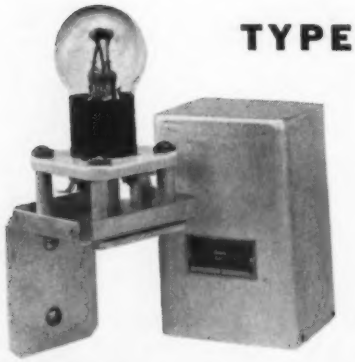
C-45

KOPPERS
PRESSURE-TREATED WOOD

Gas filled tubes discharge high voltages much faster than conventional carbon blocks — ten times faster than air gaps — and discharge both sides of the pair at the same instant, preventing build-up and damage to equipment and insulation.

TYPE 167-B For Carrier Terminals

A panel-type unit which protects carrier terminals, their band pass filters, and other equipment from excessive voltage on the carrier line, the power line, or both. Consists of two plug-in type tubes, two 6-amp auto-reset circuit breakers, terminal strips, protected power outlet, and convenience outlet. If lightning or a power surge loads both power and telephone lines at the same instant, each tube discharges its respective line, with the circuit breakers also serving the power line. These circuit breakers also prevent follow-up arcs from normal current, eliminating expensive fuse replacement trips. Tubes are of 300-500 volt breakdown, will serve for years without maintenance. In that time, only a direct hit or near miss will be cause for replacement. For both remote and central office carrier terminals. The units mount on standard 19″ racks, are 3½ inches high.



TYPE 167X1
For Telephone Lines

Single-tube, single-pair protector of carrier line filters, impedance matching transformers, and similar equipment connected to open wire lines; also the drop side of subscriber carrier terminals. Uses plug-in type 300-500 volt tube. For easy bracket mounting, with snap-on weatherproof cover, fully insulated leads.

Write or call for information or Bulletin 259-C

BUCKEYE TELEPHONE & SUPPLY CO.

1250 Kinnear Road Columbus 21, Ohio

Telephone — HUdson 8-0655 (Area Code 614)

"The amount approved for electrification loans includes a direct authorization of 125 million dollars plus a contingency fund reserve of 70 million dollars, making a total of 195 million dollars. For telephone loans, the direct authorization approved is 120 million dollars plus a reserve of 30 million dollars, a total of 150 million dollars.

"The amount recommended will provide a total of 225 million dollars for electrification loans for fiscal year 1962, including a carry over of about 30 million dollars. The amount included in the bill will provide a telephone loan program of 151 million dollars for 1962, including one million dollars to be carried over from 1961. These amounts appear to be adequate to meet the loan applications expected during the year.

"In connection with new loans, the REA should determine a proper level of reserve for each applicant, should set up proper criteria for granting new loans, and should make certain that funds are used for the purposes for which they are made available.

"Salaries and Expenses — The full budget estimate of $10,024,000 is proposed for administrative expenses for the coming fiscal year. This is the same amount as appropriated for fiscal year 1961."

The 345 million dollars in new funds authorized by the committee is 100 million dollars more than the amount requested in the Eisenhower budget.

For the fiscal year ending on June 30, 1961, (the current year), Congress had appropriated 170 million dollars in new funds for the electric program, and 140 million dollars for the telephone program. Carryovers and rescissions brought the amount available for electrification loans to approximately 308 million dollars and for telephone loans to approximately 143 million dollars.

Best Isn't Good Enough

"Progress is not made by taking pride in our present standards, but by critically examining these standards, hypothetically setting higher standards, and attempting to achieve them." — FOSTER FURCOLO.

WISCONSIN CONVENTION

Concluded from page 35

Chart of General Telephone Co. of Wisconsin manual central office equipment—realized life in relation to years after original installation for 69 Wisconsin manual offices in service as of Dec. 31, 1957 (trend line estimated).

Ray J. Riordan, association executive vice president, in his annual report to members, surveyed the legislative front, covering such matters as the minimum wage bill, the 750-station-exchange operator exemption, the excise tax on telephone service, and late reports to the Wisconsin Public Service Commission. He urged watchfulness regarding the idea of withholding a percentage of dividends, which has been suggested by President Kennedy — especially since many telephone companies are presently paying dividends.

Mr. Riordan reviewed a boundary decision case which will be considered by the Wisconsin Supreme Court in the fall. He also mentioned that an association group life insurance plan is in prospect.

The following are the directors of the association for the coming year:

Harris G. Allen of Milton Junction; E. L. Beyl of Osceola; Phil Bigley of Viroqua; Allan C. Brown of Rhinelander; Tony M. Gotstein of Casco; George F. Griffin of Amery, and D. H. Hansen of La Crosse.

Also, J. H. Hasselman of Mondovi; Gilbert A. Karcher of Burlington; J. F. O'Connell of Madison; H. L. Olson of Weyauwega; R. G. Peterson of Wittenberg; G. A. Rutenbeck of Milwaukee; H. M. Smith of Neillsville, and Howard Teasdale of Sparta.

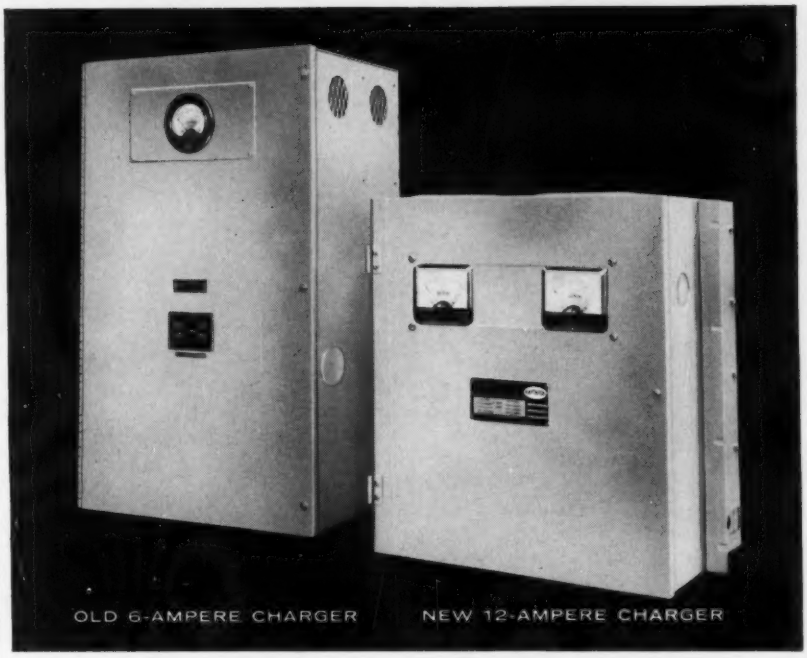
The directors elected the following officers: President, Mr. Hansen; vice president, Mr. Bigley, and executive vice president, Ray J. Riordan of Madison.

Directory Omission

The Denver, Colo. sales office address of Midwec Corp. was inadvertently omitted from the Manufacturers Index in *Telephony's 1961 Directory of the Telephone Industry*. The address is: 601 S. Jason St., Denver 23.

Secrets Shouldn't Be Shared

"Everyone agrees that a secret should be kept intact, but everyone does not agree as to the nature and importance of secrecy. Too often we consult ourselves as to what we should say, what we should leave unsaid. There are few permanent secrets, and the scruple against revealing them will not last forever."—LA ROUCHEFOUCAULD.



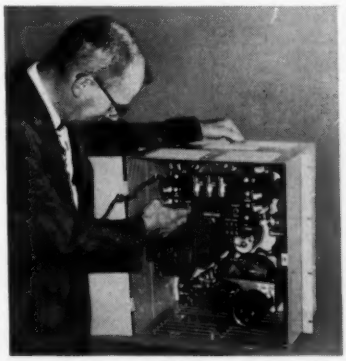
How telephone battery chargers have changed!

Twice the power, half the size!

Yes, these new Raytheon silicon battery chargers pack twice the battery charging capacity in half the space. But that's not all. They also provide excellent regulation (±1%) and noise-free output (30-millivolt filtering) with improved dependability.

These new solid-state designs use fewer components, minimizing possibility of failure through simplified design. They utilize conservatively rated silicon rectifiers which are non-aging and have extremely low power losses. In your exchanges, this means:

- greater operating efficiency
- longer life
- no adjustments
- space-saving advantages



SEE FOR YOURSELF... write today for more complete details or—if you wish—ask to see the Raytheon telephone field representative in your area.

Raytheon Company, Commercial Apparatus & Systems Division, Keeler Avenue, South Norwalk, Connecticut.

RAYTHEON

RAYTHEON COMPANY

COMMERCIAL APPARATUS & SYSTEMS DIVISION

LOW COST...

RELIABLE
PRECISION
TRANSISTORIZED

Transmission Test Equipment

NEC

A line of portable, lightweight, transistorized test equipment designed and constructed in accordance with the highest standards of quality to meet the present and future needs of the engineer and field man, and developed specifically for the telephone industry.

MODEL TTS 4A
TRANSMISSION TEST SET

- Measuring Range: +18 dbm to −50 dbm
- Send Levels: 0 dbm to −40 dbm. Can be supplied with +10 dbm level.
- Send Frequencies: 10 fixed frequencies, including 1300 and 2300 cps, plus continuous tuning from 20 cps to 20 Kc with Model TTS 4XV accessory cover.
- Impedances: 600 and 900 ohms
- Self Calibrating
- Talk and Hold Circuits

MODEL
TTS 15A
TRANSMISSION
TEST SET

- Measuring Range: +8 dbm to −30 dbm
- Send Levels: 0 dbm to −30 dbm
- Send Frequencies: 8 fixed frequencies including 1300 and 2300 cps
- Impedances: 600 and 900 ohms
- Switchable Hold Coil
- Switchable Termination: 900 ohms +2 mf
- Simultaneous Send and Receive

MODEL
TTS 18A
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CURRENT
METER

- Level Ranges: 0 dbm to −20 dbm and −10 dbm to −30 dbm
- DC Current Range: 0 to 100 ma
- Dial Through Provisions
- Battery Check
- Wide Frequency Response

Other instruments available from Northeast Electronics Corporation include Single Frequency and Multi-Frequency Reference Tone Generators, Loop Around Transmission Test Systems, Fault Locator, Singing Point Test Set, Program Amplifiers, and RF Power Monitors.

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WRITE FOR COMPLETE CATALOG

NORTHEAST ELECTRONICS CORPORATION
AIRPORT ROAD, CONCORD, NEW HAMPSHIRE

COURTS AND COMMISSIONS

Continued from page 46

Counties Telephone Corp. About 100 of the 1,500 subscribers of the two exchanges have this toll-free arrangement.

Whitney Point was scheduled for conversion to dial on June 10. The proposed increase would give the Chenango company $4,700 yearly in additional revenue.

Ohio Company Votes to Merge, Exchange Stock

Stockholders of the Wellington (O.) Telephone Co. on May 17 approved a merger of their company with Northern Ohio Telephone Co., Bellevue. Robert Gott, Wellington company manager, said the merger got an 86 per cent yes vote. It now goes to the Ohio Public Utilities Commission for approval.

The Northern Ohio company will exchange shares of 5 per cent preferred stock one for one, and will give 9⅝ shares for each share of Wellington's common stock, if the merger is approved by the PUC.

Ill. Commission's Colter Gets Federal Advisory Post

Commissioner Cyrus J. Colter of the Illinois Commerce Commission has been appointed to President Kennedy's new Administrative Conference of the United States. The conference, of which Dean James M. Landis, special assistant to the President, is a member, was created by executive order and states in part:

"The purpose of the conference shall be to assist the President, the Congress, and the administrative agencies and executive departments in improving existing administrative procedures. To this end the conference shall conduct studies of the efficiency, adequacy and fairness of procedures by which federal executive departments and administrative agencies protect the public interest and determine the rights, privileges and obligations of private persons."

Commissioner Colter will also continue his duties as a member of the ICC.

Ask Incorporation in Neb.

The K. & M. Telephone Co., Chambers, filed articles of incorporation with the Nebraska Secretary of State on June 1. Authorized capitalization is $300,000. Incorporators are Kenneth W. Werner, Mildred L. Werner, Dennis D. Werner and Connie J. Werner, all of Chambers, Neb. The exchange is now served by the Chambers Independ-

ent Telephone Co., and operates 143 company-owned and 178 service stations, all dial. Kenneth W. Werner is manager.

Authorize Sale, Stock Transfer of N.Y. Companies

The New York Public Service Commission on June 2 authorized Southern Tier Telephone Co., Inc., Apalachin, to acquire the franchises and telephone plants of Lockwood Telephone Co. and of Grace B. Holmes, doing business as Apalachin Telephone Co.

The commission also allowed Southern Tier to borrow up to $550,000 from the Rural Electrification Administration, using the bulk of such funds to finance a plant expansion and modernization program which is scheduled for completion by 1963.

Request Permit to Sell; Ask Certificate in Illinois

The La Fayette Mutual Telephone Co., it was reported on June 3, filed application with the Illinois Commerce Commission for authority to sell all its facilities and properties, except cash assets, accounts receivable, etc., to the Mid Century Telephone Cooperative, Inc., Canton.

•

In another petition before the commission, Harrisonville Telephone Co. applied for a certificate of convenience to construct property and conduct business in and around Maeystown.

Southwestern States Asks OK to Sell Stock in Ark.

The Southwestern States Telephone Co., Brownwood, Tex., asked the Arkansas Public Service Commission on May 23 for authority to sell 110,000 shares of common stock with a par value of $1 a share.

The company said the money would provide additional capital for an 8-million-dollar expansion program this year. Southwestern States plans to spend $715,000 of this in Arkansas, where the company has 26 exchanges.

Ala. Relocation Payment Bill

The Alabama House of Representatives has passed and sent on to the state Senate a bill which provides for reimbursement of public utilities for costs of moving their facilities when necessitated by interstate highway construction. Under the bill, the state would pay 10 per cent of these costs, with the balance being paid by the federal government.

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DITCHES, LAYS CABLE for 1½¢ per foot

A cable installation department of a major telephone company recently cut cable laying costs of 5 to 9 cents per foot down to 1½¢ per foot with a 77 Trenchliner. Results such as these are not unusual with the 77.

Here's why...

SPECIAL CABLE LAYING DEVICE — rubber wheeled cable feeder protects cable, lays it down in ditch automatically as 77 moves ahead.

BIG CAPACITY, SMALL DIMENSIONS — the 77 delivers up to 21 lineal feet of trench per minute, yet isn't much wider than a yardstick. Ideal for close-quarter work.

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TO PAY FOR ADDED YEARS OF POLE SERVICE

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Pole Sprayers' standard service includes a climbing inspection by trained field crews . . . location of internal decay spots . . . moisture content readings . . . the use of proven preventatives . . . double application to the top 6' of the pole and special attention to checks and spur-cuts. Quality control of preservative retention is furnished at no extra charge by sampling and laboratory analyses, not later than 30 days after treatment.

Records prove that keeping even a small number of older poles on the job safely and efficiently more than pays for a planned inspection and treatment program. For full information, write: POLE SPRAYERS, INC., 976 Ellicott St., Buffalo 9, N.Y.

Pole Sprayers Inc.

SERVING UTILITIES SINCE 1935

Ark. Independent Asks Approval of Loan

The Hardy Telephone Co. asked the Arkansas Public Service Commission on May 26 for authority to borrow $260,000 to expand its system in north Arkansas.

The company plans to install dial exchanges at Ash Flat, Cherokee Village and Viola and expand and modernize its system at Evening Shade, Hardy and Salem.

Hearings on Sale, Rate Applications in Wisconsin

The Wisconsin Public Service Commission on June 5 was to have heard the application of the Neshkoro Telephone Co., a co-partnership, to sell to the North-West Telephone Co., Tomah.

•

The commission on June 6 received the application of the Mosel-Centerville Telephone Co., Mosel, for a rate increase.

Rate Raise at Three Pa. Exchanges Amounts to $9,254

Big Eddy Telephone Co., Narrowsburg, N. Y., has received permission from the Pennsylvania Public Utility Commission to raise its rates for its 812 Pennsylvania subscribers.

The company, which serves exchanges at Beachlake, Galilee and Callicoon, was authorized to raise its rates $9,254 effective June 1.

One-party residence rates will be increased from $4.75 to $5.50 at the three exchanges. Four-party service will be set up at Beachlake and Galilee at $4.25 monthly. Multi-party service at the two exchanges will increase from $3.50 to $4.25.

The Callicoon exchange offers only one-party service.

The Big Eddy company said it needed the additional revenue to help meet higher operating costs and to convert its plant to dial operation.

Obituary

PHILLIP MORGAN MCCULLOUGH, 68, retired vice president of Automatic Electric International Inc., died on May 28 after being struck by a motor vehicle in Cuernavaca, Mexico, where he was residing for the winter. He made his home in Denver, Colo.

Mr. McCullough had served as vice president of AE International until his retirement in 1958.

Following his retirement from AE, Mr. McCullough was a consulting engi-

Stewart

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COMMUNICATION TEST SET

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Now available the well known Model JK unit for permanent installation.

19"x3½" relay rack panel.

Any number and value of loads.

All controls, ¾" spacing binding posts and jacks on panel.

Power supply attachments available to power unit from 115 volt AC or exchange battery.

Other characteristics of the unit are the same as the Model JK.

TRANSISTOR OSCILLATOR MODEL J—Voltage output, 0, –13, –16 DBM Frequency, 1000 Cycles; Output Impedance, 600 Ohms; Power, Self-contained 700 hour mercury battery. Stable frequency and voltage.

DB METER MODEL K—in 4 ranges from –20 to +42 DBM. DB Scale, red; 1, 5, 25, 125 Volts. Scale Black. Frequency response, up to 600 k. c. Minimum impedance, 18 K Ohms.

Model JK

Enables Carrier and Line Check at both 1000 Cycles and Carrier Frequency.

Set consists of TRANSISTOR OSCILLATOR Model J, DB METER Model K, Case and Leads.

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P. M. McCULLOUGH

neer in Central America, the United States and Mexico.

Born in Omaha, Neb., he began a career in communication engineering and management that took him to most of the world's important centers of industrial activity, beginning in 1908 with the former Omaha (Neb.) Telephone Co. He took time from this service to attend the University of Nebraska and there earned an electrical engineering degree.

During World War I, he became a captain in the U. S. Army Signal Corps. After this service, he resumed his career in Omaha as a division engineer.

Mr. McCullough went to Mexico in 1925 as chief engineer of the Mexican Telephone & Telegraph Co., and in 1929 he was named vice president and general manager. In 1934 he assumed duties as a consulting engineer in New York City for Associated Telephone Utilities, General Telephone, and Postal Telegraph & Cable Corp.

At the outset of World War II, Mr. McCullough helped organize the field service of the War Production Board, and later became chief of the communications division of the U. S. Commercial Corps., concerned with highly critical war communications activities.

He joined Automatic Electric International in 1944 as vice president, and served as a key executive, planning and managing a wide range of sales projects in Europe, the Far East, and Latin America.

He is survived by the widow, Mary, and two daughters, Mrs. David E. Brown of Corpus Christi, Tex. and Mrs. Graham M. Sterritt of Denver.

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Bores Hole, Installs Casing at the Same Time . . .

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Suttle's Press Advances Two Foremen, Fisher, Shaw

Reuel Buchanan, manager, Suttle Press Division, Suttle Equipment Corp., Lawrenceville, Ill., recently announced the promotion of Oscar Fisher to foreman, offset printing department, and Don Shaw to foreman, letterpress printing department.

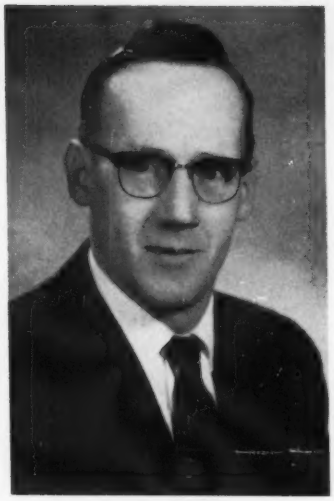
REUEL BUCHANAN

Oscar Fisher started with Suttle Press in the bindery in 1934 and then successively was press operator, compositor, linotype operator, and leader in the letterpress department. He later moved to the offset department as

OSCAR FISHER

leader, and now supervises the entire offset department, including color presses, plate making, camera and binding, collating, and folding operations.

Don Shaw began with Suttle Press as a printer's devil in 1947; then was press operator and compositor, and finally leader in the letterpress department. As foreman, letterpress depart-



DON SHAW

ment, he supervises different types of letterpresses, flat bed presses, linotype machines, proof presses, Ludlow typesetting equipment, and auxiliary operations. He can trace printer's ink in his family as far back as his great grandfather.

He is a Korean War veteran.

New Voices in the Land

Time **magazine has recently reported new signs in the thinking of many college students. There are such expressions and beliefs as: "Point to a revival of interest in individualism and decentralization of power . . . the right of private property as the best bulwark of freedom; the idea that unemployment should be alleviated by charity; and children should obey the Biblical command to honor parents by caring for them in their old age, instead of leaving the responsibility to the Social Security Administration."**

Youth appears to be rebelling against conformity.

We sometimes read that today's youth is interested only in security, and is willing to pay the price of surrendered individual rights to get it. Apparently, this is not true.

Never before has this country so needed young, forceful and articulate voices to remind us that our invaluable freedoms, our privilege to improve our material position by our individual efforts and, yes, even our obligation to be our brother's keeper, were *earned* by the efforts of individuals and not *given* by government.
—Industrial News Review.

FOR THE TELEPHONE INDUSTRY

MAGNOLIA SLIP PROOF WAX

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Telephone Company floors fortified with Magnolia Slip Proof Wax assures safer footing for all walks of life. It produces a lusterous finish without polishing but, also, gives protective finish that is long wearing, scuffs to a minimum. Magnolia Slip Proof Wax spreads easily and smoothly.

Approximate coverage fifteen hundred to two thousand square feet per gallon. Drying time thirty minutes.

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Non-Toxic, Non-Inflammable

REMOVES: GREASE, OIL, WAX, GUM, DIRT, DYE, SOAP, LIGHT CARBON, ETC.

MAGNOLIA WAX REMOVER

CF-5230

"THE CLEANER DOES THE WORK"

Formulated to do the most rugged cleaning jobs, such as removing scum, ground-in dirt and Wax Films, without harming the finest floor surfaces. Magnolia Wax Remover contains special soaps, detergents and sequestering agents selected for cold and hard water efficiency. "Triple-action" of Magnolia Wax Remover penetrates the dirt and film rapidly—holds the "wet dirt" in suspension on the surface—allows it to be thoroughly and completely "rinsed" from the floor.

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H. E. Rice Philco Vice President-Operations, G&I

H. Edward Rice has been named vice president-operations of Philco Corp.'s Government and Industrial Group headquartered in Philadelphia.

According to Henry F. Argento, vice president and general manager of the G&I Group, Mr. Rice will coordinate the manufacturing operations of the Group's five divisions. They include the Computer, Communications & Weapons, and Communications Systems Divisions in the Philadelphia area, and, in California, the Sierra Electronic Division and the company's space and satellite laboratory, Western Development Laboratories.

Prior to joining Philco, Mr. Rice was manager of manufacturing for the General Electric Co.'s light military electronics department in Utica, N. Y.

A native of Exline, Ia., Mr. Rice graduated from high school there. He joined the Victor Talking Machine Co. in 1928, working principally in service, testing and inspection positions.

In 1935, he joined GE and its radio receiver department in Bridgeport, Conn., working there for 10 years prior to his appointment in 1946 as manager of the company's White Plains, N. Y. plant. In 1951, he returned to Bridgeport as manufacturing superintendent of the "E" Division, a facility producing electronic equipment for the Armed Forces.

Later, he guided the organization and staffing of GE's heavy military electronics department, in Syracuse, N. Y. as the department's employe relations manager. In 1953, he was named manager of manufacturing of the light military electronics department in Utica, a facility producing a variety of equipment for defense electronics.

Safety Thumb Tacks

By John A. Bracken

Bits of safety reasoning, either pointed or flat, depending upon the way you look at them.

"Now is the time to practice—*Safety*."

•

"Applied *Safety*—is better than healing injuries."

•

"Stop-think—isn't there a *Safer* way?"

•

"*Safety* preparedness—helps to meet dangerous situations."

Name C. E. Petot Koehring District Representative

Charles E. Petot has been appointed a district representative by the Koehring division of Koehring Co., Milwaukee, Wis. He will cover Kentucky, Ohio, Indiana, and Michigan, and will work out of Cleveland.

C. E. PETOT

Mr. Petot was a salesman with Equipment & Supplies, Inc., Pittsburgh, Pa. distributor of construction equipment, before joining Koehring.

He is a veteran of both the Korean War and World War II. He served in the U. S. Marine Corps of Engineers.

Mr. Petot attended Michigan State University and the University of Michigan and received a bachelor of science degree from Michigan.

Radiant Light

"But it was in making education not only common to all, but in some sense compulsory on all, that the destiny of the free republic of America was practically settled."—LOWELL.

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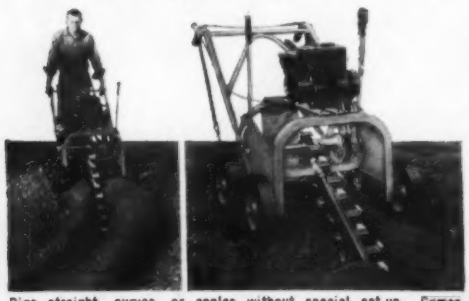

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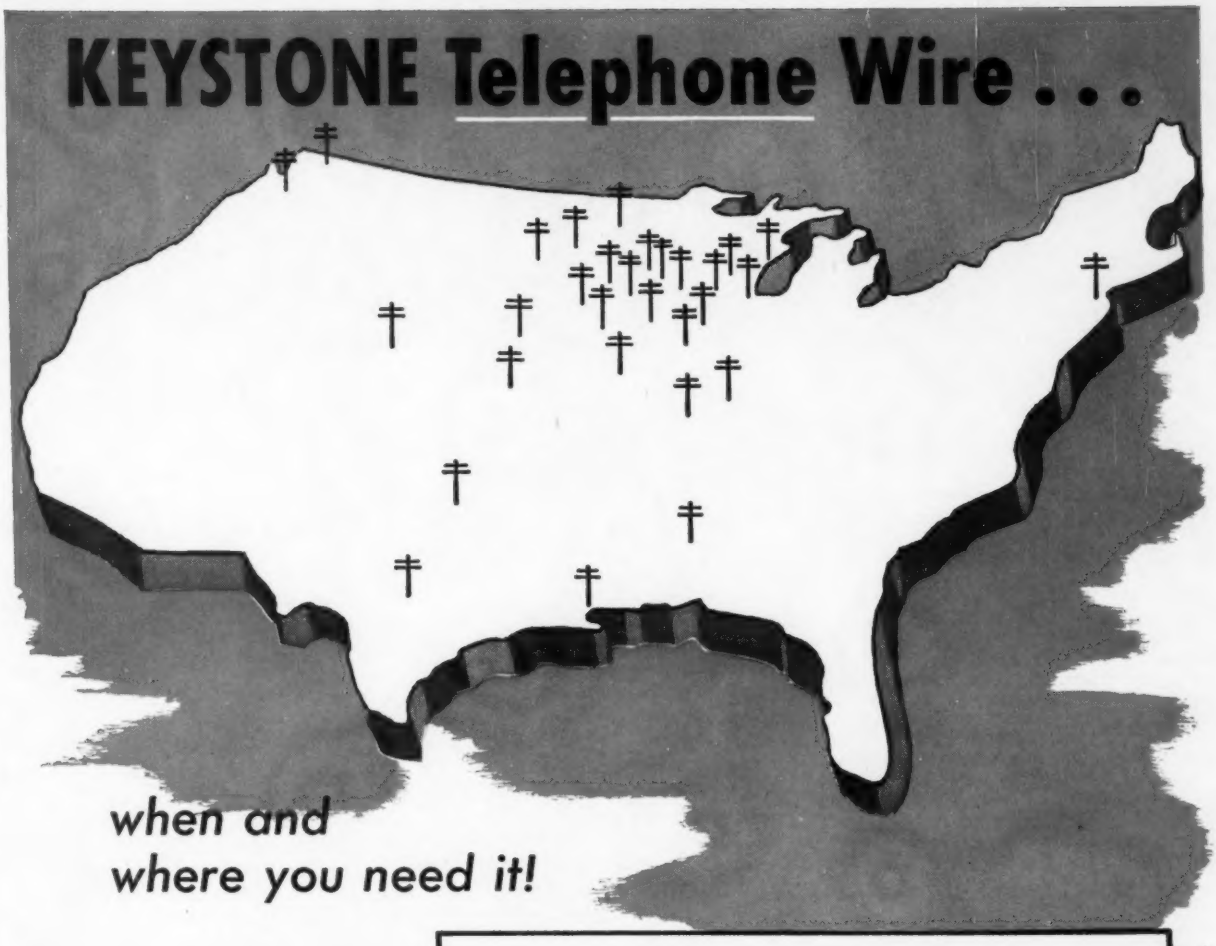

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Lubbock, Texas

Piedmont Electric Supply Corporation
Charlottesville, Virginia

Jack Pruzan Co.
Seattle, Washington

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Chattanooga, Tennessee

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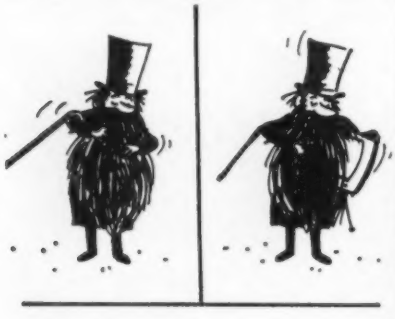

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Special Service Departments:

A Solution for Telephone System Overloads

*By Maurice E. Kennedy**

MOST county governments experience periods of serious peak overloads on telephone switchboards during tax and election periods. Other emergency peaks develop following changes in charity laws, during most emergencies, or as a result of announcements by well-meaning radio and TV stations or newspapers advising the citizens to call the "county offices" for advice on almost any public issue or service.

Telephone switchboards which are designed to handle normal traffic loads of a few thousand calls a day are suddenly faced with 200 to 300 per cent overloads for periods of a few days to (in the cases of tax and election periods) well over a month.

The result is a breakdown of telephone service to all stations served by the switchboard—including those in the department causing the overload—with resulting complaints of poor telephone service from the public.

In large installations, hundreds of calls an hour are unable to reach the county switchboard during these overload peaks, normal telephone traffic is lost, and jamming of automatic relay switching equipment may take place back in the telephone company switchrooms, causing the breakdown of telephone service in a large area.

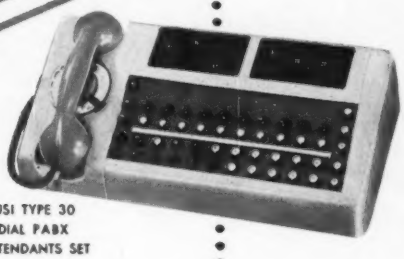
The simple objective during these special service overloads is to greet the telephoning public with experienced employes who know the answers to questions without the need for delay in routing calls through a telephone operator or the necessity of transferring calls between telephones until the right per-

*Mr. Kennedy is Director of Communications for Los Angeles County, Cal.

View of part of Los Angeles County (Cal.) Information Center during tax question period. Employes at answering-turret tables are trained to answer questions and are armed with reference materials. The Los Angeles County Department of Communications pioneered a system for call distribution, a new and larger version of which was installed in November in the department's new building.

"THE SHAPE OF THINGS TO COME"

already here!



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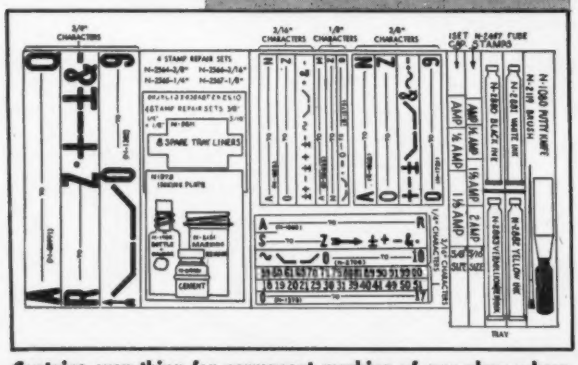

Contains everything for permanent marking of any place where a non-fading, vivid, easy-to-read, clean marking is required. Ideal for marking switchboard panels, junction boxes, sub-assemblies, chassis, cables, wires, etc. No tapes. Special oil-base heavy stamping inks dry with clear brilliance. Can be used for marking almost any background material.

CONTENTS: Peg rubber stamps 3/4", 3/8", 1/4", 3/16", 1/8". A-Z, numbers, symbols. Stamp repair sets—cement for repairs. Fuse capacity stamps 3/8" and 3/16". Tubes of inks—English Vermilion, Yellow, Black and White. Inking plate, knife, brushes, cleaning fluid. Housed in sturdy steel carrying case—12¾" L x 7½" W x 5" D. No. N-2315 complete..... .$66.50

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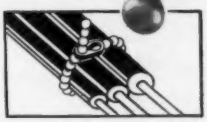
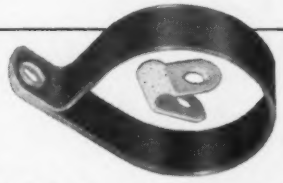


- strong — breaking point 45–95 lbs.
- chemically inert
- heat resistant
- in red, blue, yellow for color coding
  also available in 101 nylon



You'll be surprised at the low cost of these rugged work-savers. Also available from Nylogrip: Nylon screws, nuts, Brilok® nuts, Dubo lock-washers, plastic clips. Send today for complete information and samples.

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son can be found to answer a question.

The older methods tend to lose calls in making transfers, or occasion longer holding time on calls due to busy station conditions on a few telephones which are attempting to handle specific types of public inquiry with resulting need for a telephone operator to give constant attention to the waiting calls. Delays in reaching the correct county station once the operator (but not the local telephone station) is reached will also mean unproductive waiting time, cost, and irritation to the taxpayer who initiated the call from a multi-unit calling area.

Los Angeles County has for years been experiencing overload peaks of upward of 10,000 calls a day beyond normal heavy traffic during tax and election periods. Smaller overloads follow everything from a sonic boom to newspaper articles concerning changes in policy regarding medical aid to charity cases.

To solve the telephone answering service problem, engineers from the County Department of Communications, working with telephone engineers, came up with the design of a system which permits the direct handling of 50 calls at a time with special selector-memory equipment which routes waiting calls, in the order in which they reached the automatic equipment, to the next open instrument. Head sets of the "telephone operator" type are worn by the "experts" who talk to the public.

Charges on multi-unit calls from the taxpayer do not start until the calling party is actually connected to the trained employe who knows the answer to their questions.

The regular county telephone switchboards with normal county business calls are not associated with this call distributing system.

Two long rows of answering-turret tables (shown in the accompanying photograph) are staffed with county employes, each with many hours of careful training and equipped with specially prepared books of answers and other material before them for ready reference.

In the case of the assessor and tax collector's peak periods, the flip of a switch before any of the "experts" will transfer a call to a supervisor in the same room with even more knowledge on the subject concerned, or in extreme cases of complex legal concern, any call can be transferred upstairs to a final authority.

In the instance of the need for answers to tax problems, this special telephone number (actually 50 incoming lines in rotary responding to one number) is printed on the tax bills in large type. The number has no connection with regular county telephone switchboards or their normal incoming trunk line telephone numbers.

Normal county business flows in and out of county offices in a normal manner unhampered by the peak overloads which bypass regular traffic channels.

The new system is installed in the Los Angeles County Hall of Administration in a room adjoining the telephone equipment and switchboard area.

The system was placed in service on Nov. 1 and to date has been fully utilized by the county assessor and tax collector's offices.

Use by other departments with peak overload problems will be handled in a similar manner with the only problem being the publishing or notification to the public of the special telephone number to use and instructions not to use regular telephone numbers.

Employes from other departments using the call distributor will be trained and assigned to the answering-turret positions for the duration of their telephone overload period.

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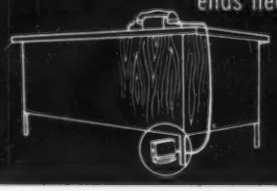
keeps desks free from all telephone equipment
ends needless marring of office furniture



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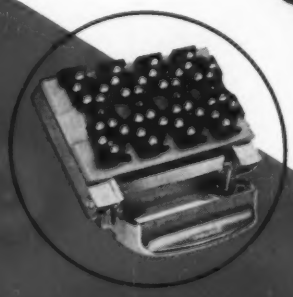
Floor-Con allows all telephone installation work to be completed in advance of moving. All wiring is concealed. Approved and specified by telephone companies. Floor-Con is used exclusively in many large buildings in business, industry and government. Floor-Con attaches to all types of underfloor duct systems, flush type floor boxes, single conduits, through the floor—or if conduits are not provided, screws directly to the floor.

Comes in four plated finishes: Chrome—satin or bright, and Brass—satin or bright.

All necessary fittings will be supplied to adapt Floor-Con to your particular duct system or floor installation—please specify the type or make in use.

MODEL 104 shown with standard telephone equipment, accommodates up to 8 No. 44-A Connecting Terminals (4 on each side).

MODEL 102 accommodates up to 6 No. 44-A Connecting Terminals (3 on each side).



(Pat. No. 2854166)

For catalog information and prices, write:

FLOOR-CON Dept. T
759 North Spring Street / Los Angeles 12, California / Telephone: MAdison 4-5400

Advance planning for staffing and activation of the answering system can be anticipated for known telephone traffic peaks. It is planned that certain groups of these special incoming telephone line trunks will be multipled to the main telephone switchboard between turret operations in order to pick up any calls that may be placed to the special number during off-season or down-time on the automatic call distributor.

There is no technical reason why the special answering system could not be staffed and operated on a 24-hour basis for any type of service where a large number of incoming telephone calls which should bypass normal telephone facilities need to reach a county operation.

Considerable interest in the telephone answering system has been shown by other governmental agencies. Special formica-covered sloping-top tables were constructed in our shops for the operator positions and for mounting of associated call diverting switches. Modifications or smaller versions of the answering system are possible for counties or commercial agencies with smaller telephone traffic peaks.

Each attendant's equipment consists of a head set, plug-in jack, and a special key-switch unit which enables her to receive and hold calls, transfer calls and if necessary make outgoing calls.

A key part of the automatic call distributor system is the special panel on the supervisor's desk which indicates by colored lights the volume and flow of calls, and the availability of attendants to handle them. This indicator panel also indicates the general efficiency of the operation at any given instant and the adequacy of staffing during different hours of the day.

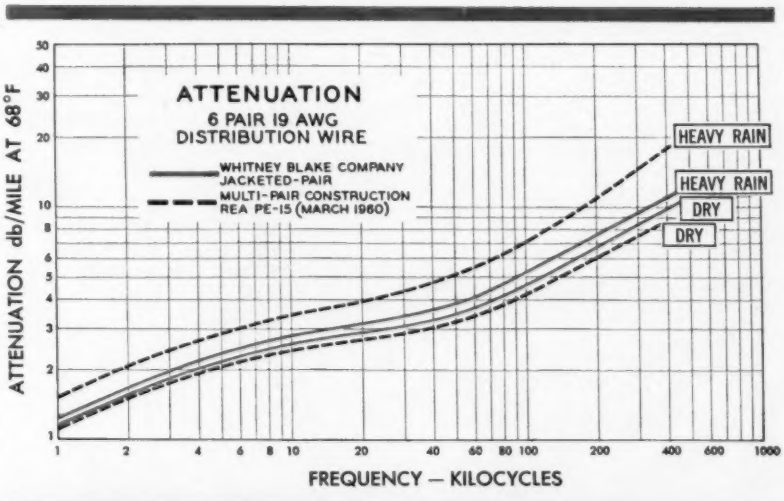
About the only problem in the use of such a system is the advance training of a staff of employes to answer the incoming questions and the publication of the special telephone number so the public or field operations personnel will call the specialists prepared to help them.

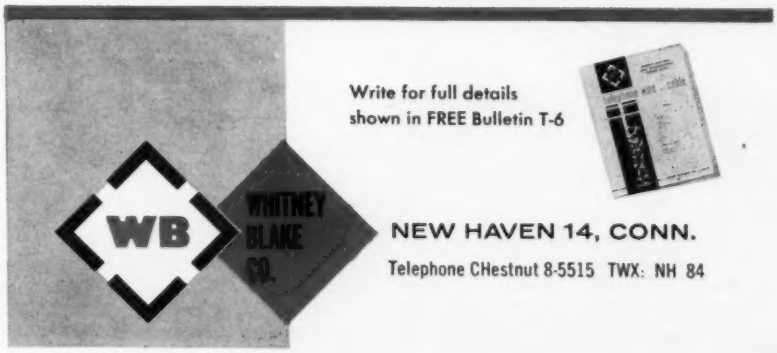
Any major emergency service requirements for this equipment would present 24-hour staffing problems.

Common Heritage

"The mystic cords of memory, stretching from every battlefield and patriot grave to every living heart and hearthstone all over this broad land, will yet swell the chorus of the Union, when again touched, as surely they will be, by the better angels of our nature."—ABRAHAM LINCOLN.

JACKETED-PAIR now makes possible the use of carrier equipment as a result of the relatively small change and low level of attenuation. For example, at 400 kilocycles, the attenuation for PE-15 type increases106% from dry to heavy rain while JACKETED-PAIR increases only 12% at this frequency.





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The difference between night and day

Better Storeroom Layout Cuts Costs, Improves Service

By William J. Milford

"OUR BUSINESS IS so small that we have no storeroom problems," a telephone company manager told us recently.

He was in error, just a little, for survey after survey has shown that the small installation is one where much needs to be done in obtaining better storeroom layout. The storeroom presents a good opportunity to cut costs and secure more from the budget.

Proper storage of supplies provides assurance against losses through deterioration, handling, waste, etc.; enables flow of supplies to use areas at the lowest possible cost in wages and time; and assures a much closer control over inventory of supplies. In each of these ways, serious application to the storage problem gives the small installation more for its money.

Location. Initially, location and organization of storage areas should be determined with respect to need. Supplies stored at a point far distant from the source of use are made more costly because of the time required to transport them from one place to another.

Basically, then, the storeroom should be so located and developed as to provide storekeeping service at a minimum of cost. Every storeroom plan should provide for a maximum of flexibility to meet changing conditions, such as in the amount of inventory to be carried from time to time, and for possible change in the future.

Receiving area. When incoming supplies are of a bulky nature, or require special handling equipment, it is usually more economical to store them in an area close to the point of receipt; or to move them directly from the receiving desk to the use center. The larger and more bulky an item may be, the greater will be the cost in handling it. Too many handling times between receipt and use also add materially to costs.

Central storage. In the small location, centralized storing has so many advantages that it may be best to plan storage facilities for the specific and most convenient location.

Better storeroom supervision to obtain more efficient use at a central location is also an asset.

Other advantages of central storage are:

Allows for fewer persons on the payroll for handling and storage of supplies.
Enables all personnel to become familiar with every item.
Provides for better service to facilities.
Uses less total space.
Provides for easier periodic physical inventory, as well as smaller clerical costs.

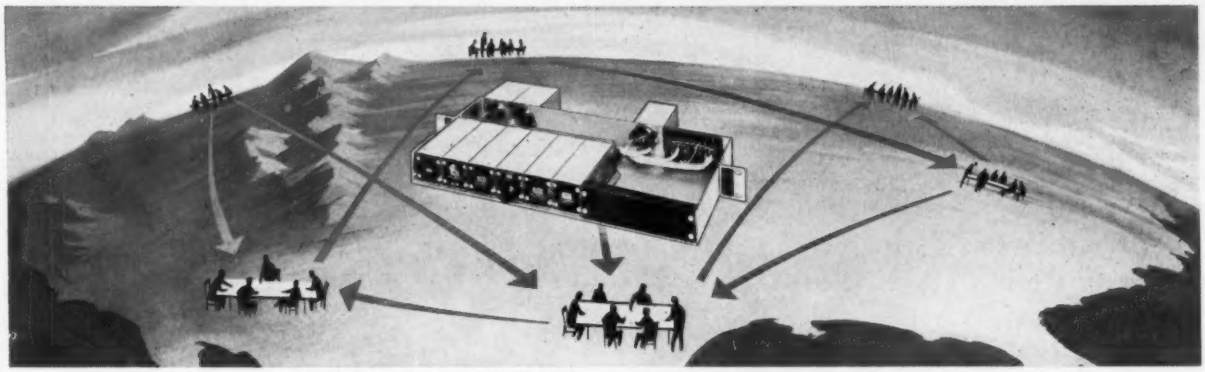
In an actual layout of storage facilities, it is always desirable to place "up front" those items requisitioned frequently. The small quantities of less often used items should be relegated to rear positions. This is in keeping with the over-all policy of creating storage facilities looking toward reduction of wage-hour costs in handling materials.

It is also more economical, as well as more convenient, to store together all articles of similar size, or shape, unless degree of use is very great. Following this procedure results in savings of shelving, bins and other storage equipment, and permits flexibility in supply inventory not otherwise attainable. Low stocks, stored in adjacent areas, can allow immediate storage of a favorable purchase of supplies in the same area; where otherwise, surplus of the new item would have to be stored in another location. An extra move of the supplies, later on, would add to handling costs.

Accessibility. The prime consideration in planning a storeroom layout is to make certain that supplies are readily obtainable when they are needed; that the layout facilitates storage control; that it be as flexible as possible; and that the proportion of aisle area to storage area be as low as the considerations will allow.

Aisles. Sizes and proportions of individual areas in the storeroom should be studied closely; for they will affect the proportion of aisle area-to-storage

NEW...ALTEC LOUDSPEAKING TELEPHONE SYSTEM FOR INTER-OFFICE TELEPHONE CONFERENCES COAST-TO-COAST



Now, Derive Unlimited Extra Revenues from Existing Lines with This Important Advance in Telephone Service!

Coast-to-Coast inter-office telephone conferences with many talkers at each location are now possible with the new ALTEC 7302 Loudspeaking Telephone System. The 7302 is a fully transistorized system that maintains uniform talking and listening levels regardless of distance with speech transmission of such great fidelity that familiar voices are recognizable instantly. With an effective audio coverage of a large size executive office, the system offers freedom of movement and comfortable hands-free operation to large groups of talkers.

The 7302 operates on *existing telephone lines* in conjunction with type 510 set or equivalent. Associated ALTEC equipment includes the 755C Loudspeaker and one of the following ALTEC Cardioid Microphones: Models M-30, 683A, or 685A. The 7302 mounts in standard 19″ relay rack and occupies only 1¾″ rack height. Power is supplied to the system from central office or PBX quiet battery supply of 24-26 v DC.

This system—now in use by a nation-wide retailer and a drug chain—provides the answer to their needs for instant consultation among their executives at branch offices throughout the country. With this system, you can now fill the many requests for this type of service from brokerage houses, military command facilities, and any organizations requiring group discussion of problems among specialists in separate locations. For complete information write Dept. TA-6.

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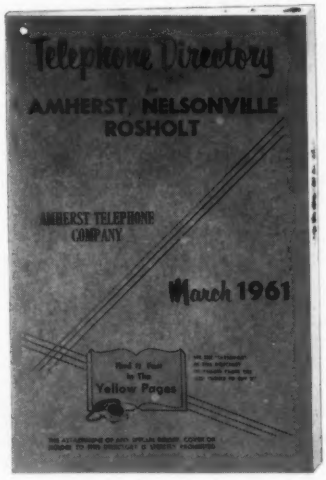

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Regional Distributors: Buckeye Telephone & Supply Co., Columbus Ohio; The Lindsay Telephone Supply Co., Cleveland, Ohio; Pankey Supply Co., Charlottesville Va.

*It's dated for comparison.

area and the flexibility of the arrangements.

It is always best to specify dimensions of the storage areas in multiples of unit dimensions. For example, if unit dimensions are 3 x 5 feet, and another unit (which might be stored in the same area) has dimensions of 4 x 7 feet, a storage area depth of 11 feet would always have some unused space.

But a depth of 12 feet would provide efficient accommodation for both items. Economical use of storage area would thus be assured.

A main aisle should run the length of the storeroom and an adequate width—usually five to ten feet—should be provided to avoid traffic congestion and possible damage to supplies while they are being stored or withdrawn. Large storerooms may require subaisles parallel to the main aisles at distances of about 20 feet.

Cross aisles, perpendicular to the main aisle, can provide access to bins or racks and to separate self-supporting piles of large items. These cross aisles may be wide enough to accommodate one-way traffic only, yet allow sufficient space for loading and unloading.

During rush hours, supplies may be received faster than they can be unpacked and placed in proper spots; so that sufficient area should be provided in the storeroom to avoid congestion under such conditions.

Protection program. Initial planning of the storeroom also calls for a program of protection from fire, rust and corrosion, deterioration, evaporation, dust, theft, and weather conditions such as heat, cold, and moisture. Each kind of material requires its own type of care; and this should be included in the work program of the storage department.

Adequate fire fighting apparatus should be installed by the company, and be readily available at different parts of the storage area; not in just one location. Fire spreads very fast among stored supplies, and the time it takes to move across the storeroom to obtain an extinguisher may very well be just enough to let the fire get out of control.

Another concern is dust. Protection from dust can be achieved by leaving supplies in their original shipping containers until ready for use. In many instances, closed-door cabinets provide dust-free areas for supplies.

Honor Should Be Earned

"Respect is better procured by exacting than soliciting it."—GREVILLE.

Discover Beneath Distractions Ideals Worth Fighting For

The *Industrial News Review* recently explored in the following commentary one of the most important concepts involved in the struggle for supremacy taking place in the world today:

"If there is one word which describes the condition under which we and all civilized peoples live today, it is the word 'distraction.'

"This is a common enough word, but it has wide and significant meanings. For one thing, the dictionary tells us, it means a drawing off, or diversion of the mind. It means confusion and perplexity. Then, at the far end of the spectrum, it means aberration, frenzy, even madness.

"We have a plentitude of distractions these days. The cold war goes on and on, ever-broadening, with no end in sight. The world's eyes were recently riveted on an unprecedented meeting of chiefs of state at the United Nations in New York where, literally, one well-aimed rifle shot could have marked the beginning of World War III. We have just gone through a political campaign of unique intensity, in which the decision was agonizingly close. We have witnessed a reign of terror in Africa which reads like a chapter from the Dark Ages. We have seen the establishment of what amounts to a Communist-dominated state a few miles from the southeastern tip of this nation. And—in a single year—some 40 new countries with their own flags, parliaments, aspirations, and latent and unknown powers, have come into being.

"On top of all this, we have our deep and passionate controversies at home—as to what should be done in such diverse fields as education, medical care for the old and indigent, the production of electric power in the nuclear

"You'll get used to working down here Fitzroy. Just don't look up!"

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age and, above all, the proper role of government in ordering and directing the lives of the people.

"So 'distraction' is the symbolic word. Our minds are torn in a hundred fragments. The problem has been compounded to an enormous degree by magical progress in the arts of communication, visual and verbal. In a matter of seconds, some event taking place half a world away is made known to us, in words and pictures. In a matter of hours, we ourselves can physically travel half a world away from our homes.

"It is no wonder that, living as we must in this turmoil, it becomes, as the old French proverb has it, more and more difficult to see the forest because of the trees. Fundamentals become dim and may even be lost beneath the cruel and blinding light of changing and threatening events.

"But some things do not change. That is what we, because of our heritage and because of our inescapable position as leader of a free world confronted by a slave world which wants to destroy us, cannot afford to forget.

"The question is: What is it all for, this spending of almost unimaginable resources of energy and treasure on a scale never before so much as approximated in history? Why may we be asked, as a people, for personal, material sacrifices greater than any we have yet known?

"There is a simple answer—that we must defend ourselves and our friends among the nations against the forces of darkness which are our enemies. But that is not the whole answer by any means.

"The real answer is that we are doing this—if it is to have any real and permanent meaning at all—in order to preserve the best and oldest ideal that history knows, which is freedom. Freedom means many things. It means a high degree of personal responsibility and pride, in which one cares for himself and his family without looking to government for aid unless no other avenue is open. It means, in the fine old sense of the phrase, a government which is the servant and never the master of the people. It means that leadership and national purpose come from the people and are not imposed upon them from above. It means a deep spiritual belief that every man is important, as a person and an entity—and that men in the mass can never be allowed to submerge the individual, and make him a number among faceless millions of numbers.

"Whatever we have done, are doing, or must do, will be worth every necessary cost if this ideal is kept bright and shining before us. But if we lose it—if we allow the individual to become a powerless, driven pawn in a game played by rulers — everything worthwhile will be lost too."

Propose Standardized English Technical Definitions

A proposed set of more-precise technical definitions that might be mutually agreed to by English-speaking communications engineers from several countries was presented in Chicago on May 22 to communications experts gathered for the Fifth National Symposium on Global Communications.

Howard H. Smith of ITT Communications Systems, Inc., Paramus, N. J., pointed out that the technical language of English-speaking engineers working on communication transmission systems has developed independently on both sides of the Atlantic for more than 30 years.

Consequently, interchanged terms and methods are often unfamiliar or misunderstood. With increasing demands for international communication channels, both military and civilian, there exists the possibility of complete chaos when a long intercontinental circuit must be set up using facilities designed by both groups of engineers, he said.

The proposed definitions, Mr. Smith stated, have evolved from the establishment of technical standards for the Air Force's global communications complex.

Richard Harris Head of Instruments, TIC of Acton

L. C. Bower, general manager, has announced the appointment of Richard Harris as manager of the instrument division of Technology Instrument Corp. of Acton.

Mr. Harris was formerly with Sanborn Co. as department manager of preproduction engineering for medical and industrial recording systems and transducers. Previously, he was with Servomechanisms as chief electrical engineer for military airborne computers, instruments and transducers.

Mr. Harris is a graduate electrical engineer from Northeastern University, and attended Columbia University as a graduate student in electrical engineering.

He is a member of the Institute of Radio Engineers and of Tau Beta Pi.

Adversity Fosters Innovation

"We cannot conquer fate and necessity, yet we can yield to them in such a manner as to be greater than if we could."—LANDOR.

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Eppinger & Russell Co., 80—8th Avenue, New York 11, N. Y.—Creosoted Poles and Cross Arms. Plants: Jacksonville, Fla., Norfolk, Va., Eddington, Pa.

International Creosoting and Construction Co., Galveston, Texas.—Creosoted Southern Yellow Pine Poles. Plants Beaumont and Texarkana, Texas.

International Paper Co., Wood Preserving Division — 926 Grand Avenue, Kansas City, Missouri—"LONG-BELL" pressure-treated Southern Pine and Douglas Fir Poles—Creosote or Penta.

Piedmont Wood Preserving Company —Creosoted and Creosote-Penta Treated Pine Poles. Plant, Augusta, Georgia, Yards, Virginia, West Virginia and Connecticut. Address inquiries to Box 1662, Spartanburg, S. C.

Texas Creosoting Company—512 Main Street, Orange, Texas—Creosoted Southern Yellow Pine and Douglas Fir Poles. Can also treat with "Penta."

Alvis A. Ward, Altec Lansing Corp. president, trades congratulations with E. F. Grigsby, western regional sales manager, at Altec's 20th anniversary celebration. Mr. Ward marked his 20th year with the electronics firm. Looking on in background, is W. E. Gregory, manager of production planning and material control. The company has grown from one employing 28 people in 1941 to 400 today.

Economic Freedom Fortress

"While this country has no monopoly on technical skill, venture capital, or high-grade industrial capacity, it is certainly the largest single bloc of such assets in the world today. As such, it is the pivotal position of economic strength for the entire free world. No free nation, no businessman anywhere, would benefit from policies that would allow the United States economy to deteriorate or in any way lose its expansive vitality."—RALPH J. CORDINER, *chairman of the board, General Electric Co.*

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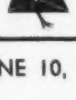
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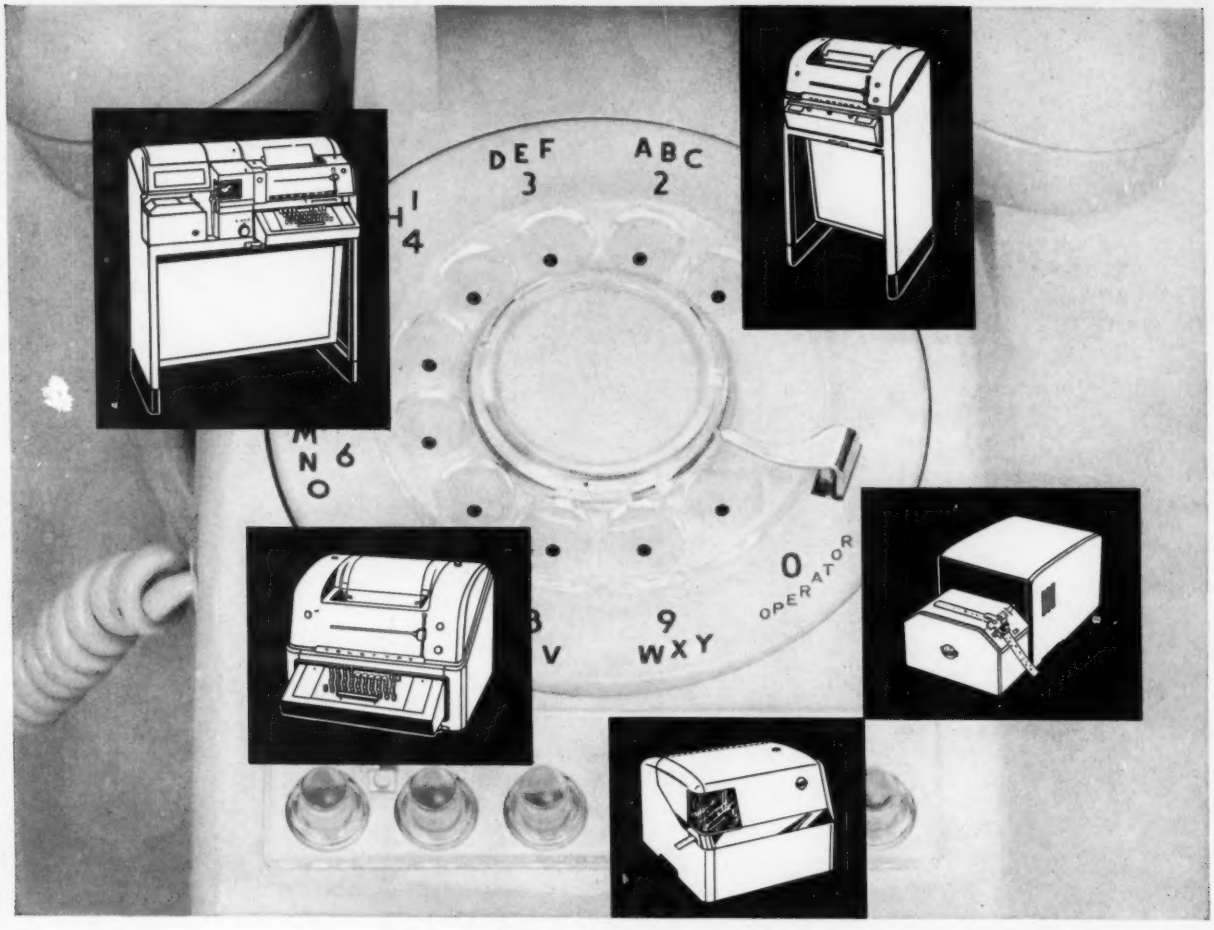

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